1859 PUBLISHED WEEKLY 1919

CHEMICAL LIBRARY
GENERAL LIBRARY
AUG 12 1919

AMERICAN GAS ENGINEERING JOURNAL

FORMERLY
AMERICAN GAS LIGHT JOURNAL

VOL. CXI., No. 6
WHOLE No. 3205

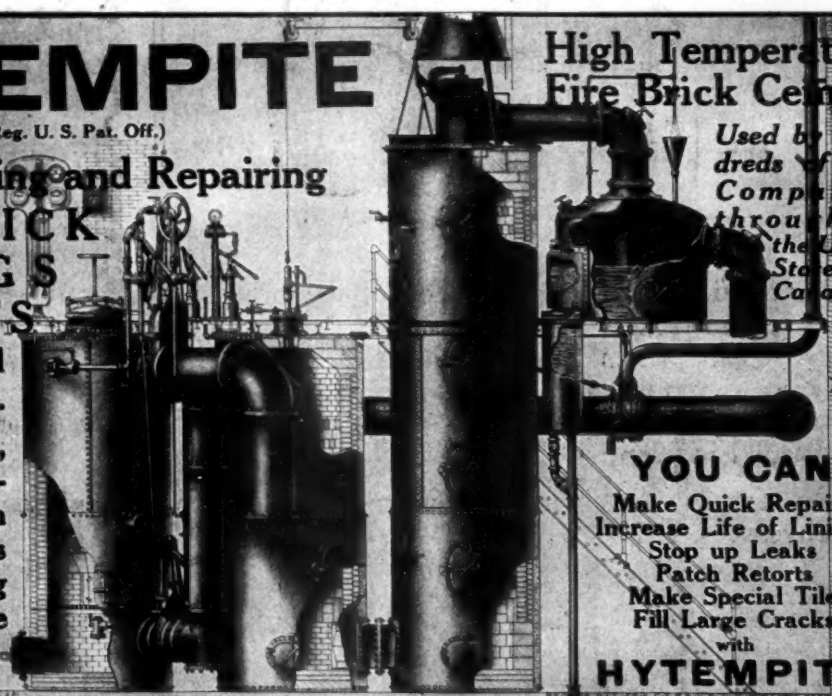
NEW YORK, SATURDAY, AUGUST 9, 1919

Subscription $3 per year
$4 Canada $5 Foreign

Recognized as Standard
in a Great Many Gas Works
For Construction and Repairs
"It Sticks to the Bricks"

HYTEMPITE
(Reg. U. S. Pat. Off.)
For Bonding and Repairing
FIRE BRICK
LININGS
RETORTS
Making Special
TILE, etc.
It Air-sets, has great binding strength as well as heat resisting and adhesive qualities.

High Temperature Fire Brick Cement
Used by hundreds of Gas Companies throughout the United States and Canada.



YOU CAN
Make Quick Repairs
Increase Life of Linings
Stop up Leaks
Patch Retorts
Make Special Tile
Fill Large Cracks
with
HYTEMPITE

Lowe Water Gas Apparatus Reproduced by courtesy of United Gas Improvement Co. of Philadelphia.

QUIGLEY FURNACE SPECIALTIES CO., Inc., 26 Cortlandt Street NEW YORK

IMMEDIATE DELIVERY FROM STOCK AT
Baltimore, Benton Harbor, Birmingham, Chicago, Cincinnati, Cleveland, Denver, Detroit, El Paso, Houston, Indianapolis, Kansas City, Los Angeles, New York, Niagara Falls, Oakland, Omaha, Pittsburgh, Portland (Ore.), Richmond, St. Louis, Salt Lake City, Scranton, Seattle, Montreal, Toronto, Vancouver, Winnipeg, Tokio, Japan

INDEX TO CONTENTS, PAGE 119 ADVERTISERS' INDEX, PAGE 20

CHAPMAN VALVES

No. 263-G

No. 264-G

Designed Especially for Gas Service

Chapman All-Iron Double Disc Gate Valve
Rising Spindle
Flange End

No. 251-G

All sizes from 10 to 72 inch
50-lb. to 70-lb. test
25 to 30 lb. working pressure

Our outside screw valve is specially recommended for use around gas-house and holder as the thread on the spindle is entirely outside the valve body, where it can be inspected and oiled. The rising spindle forms a simple and positive indication to show whether valve is open or closed. The position of the valve can be told by the sense of touch in complete darkness.

We are in a position to quote attractive prices and make prompt delivery.

Send for catalog No. 32 showing our complete Line of Gas Valves

The Chapman Valve Manufacturing Co.

Indian Orchard, Mass.

AMERICAN GAS ENGINEERING JOURNAL. Aug. 9, 1919. Vol. CXI, No. 6. Published Weekly by American Gas Light Journal, Inc., New York, N. Y. Subscription Price $3 per Year; $4 Canada; $5 Foreign.
Entered as second-class matter January 9, 1917, at the post-office at New York, N. Y., under the Act of March 3, 1879.

American
Gas Engineering Journal

FORMERLY THE AMERICAN GAS LIGHT JOURNAL

Vol. CXI, No. 6 NEW YORK, AUGUST 9, 1919 Whole No. 3205

European Gas Plants Adopt American Methods with Adaptations and Improvements to Successfully Meet Growing Competition

A Decline in the Gas Industry Not Desirable in Public Interest — Complexity of Having to Meet an Increased Demand with a Decreased Coal Supply

By L. W. ALWYN-SCHMIDT

The problems of the European gas industry are very similar to those of the American gas industry. There is the same increase in the competition of other forms of lighting for houses and streets and the leaders of the gas industry are busy to secure their position in the industrial field.

It has been realized fully in Europe that a decline of the gas industry is not desirable in the public interest. France and England especially have awakened to the fact that the gas industry forms a very important part of their economic life not to be dispensed with without danger to their whole industrial and economic structure.

Like America the rest of Europe has been rather dependent upon German for many of the by-products of gas and the manufacturers of these, and it has been pointed out repeatedly that Germany has to thank her present position in the chemical field at least in part to an enterprise which is financed exclusively by England. This is the large gas company operating a great number of gas plants in Germany, an English enterprise which during the war was taken over officially by the German government as a foreign concern under enemy management.

So France and England are ready to support their respective gas industries and it is certain that Germany will not fall behind in doing so, considering the great benefit her industries derive from the gas industry.

Situation Very Much Complicated by Coal Situation

The situation of the European gas industry is at present very much complicated by the rather unsettled conditions in the coal industry. We are only imperfectly informed about the actual happenings in the coal markets of Europe, but sufficient is known to predict a considerable upheaval in this direction which may have a very serious influence on the future development of the European gas industries. In England the coal miners are ready to strike for a nationalization of the coal mines and for higher wages. This will also raise the price of coal and what is more important, it may reduce the quantity of coal available for gas making and for the production of the by-products.

The situation is similar in France, although experts in this country seem to think that France will be much benefited by the addition of the coal fields of the Sarre Valley. It must, however, be taken into consideration in appraising the French situation that the Sarre coal fields do not really form an addition to the coal supplies of France. They are awarded to France firstly with the intention of permitting that country to replace her losses of coal in the Lens coal mines, destroyed by the Germans, and secondly to give access to coal for the purpose of working the iron mines of Lorraine. These iron mines are the natural consumers of the coal of the Sarre Valley. They have used the Sarre coal during the time when Lorraine was German and they will continue to do so in future. France, as it was, will not get a ton more of coal by this arrangement than it got before the war The position of the French gas industry, therefore, remains approximately the same as before the war with the additional impediment of receiving less coal than before from Lens and also most likely from England.

Also the German gas industry is to have its share of the general disturbance of the coal markets. The German coal mines have suffered during the war owing to disuse and the production of coal has declined at an ever increasing ratio since the outbreak of the war. The miners demand higher wages and it is not unlikely that the coal fields will be nationalized. The transportation system of Germany is said to be in a deplorable state and the gas companies complain that they receive more inferior coal now than during the war.

Has to Meet an Increased Demand with Decreased Supply of Coal

The principal European problem, therefore, presents itself as follows: The gas industry has to meet a practically normal demand for gas and an increasing demand for by-products with a reduced supply of coal bought at higher prices. The only solution so far offered has been an improvement of the methods of gas making so as to give a better result in the production of gas and a higher extraction of by-products, and a reduction in the consumption of gas by improving the technic of distribution and consumption, between the plant and the consumer and on the consumer's end exclusively. At the same time it is in the interest of the gas industry to add to the number of consumers of gas so as to widen the economic foundation of the industry and to combat the competitive tendencies of the market.

It seems that the European gas industries are approaching the very complicated problems involved in the execution of such a policy under more favorable circumstances than is the case in our own market.

The European gas industry was excellently organized before the war and the war no doubt has helped to strengthen the position of the different associations handling the affairs of the industry. Also the European gas industry working in a field of intense competition is not new to the more forceful methods of market cultivation, necessary for increasing both the consumption of gas as well as the number of individual subscribers.

How a Medium Sized English Company Held Its Lighting Business

The English gas industry had made in pre-war times a very effective bid in both directions and has succeeded very effectively in stemming the tide of electrical competition by not only retaining many subscribers but also adding continually new ones to its list. As an example, the case of a medium sized gas company, which is handling the gas distribution in a well known community near London having a population of about 40,000 inhabitants, may be cited.

This is a typical English city with a large residential quarter of high-class houses all being built in the early Victorian age and many reaching back several centuries. There is a shopping district and a quarter where small and low rental houses abound. The streets are lighted mostly by electric light, and electric light has also been introduced in many private houses. But the gas company is still doing well.

This gas company does not concentrate upon one fixed policy in its attempt to hold the market, but it has adapted itself continually to new circumstances, which in the end has led to a very elastic distribution scheme.

To start with the policy followed generally in the low rental districts. Here the gas company has arranged with the owners of the buildings for a standardized lighting service as follows: Two lighting outlets for each living room, one lighting outlet for each bedroom, one outlet for the kitchen and the hall each, and a larger outlet for a small gas range. In these houses the gas company arranges for a prepayment meter only and will not accept regular meters. It supplies together with the outlets proper brackets and slit burners and it also supplies a small gas range of standard size. All this is free of charge and goes with the installation of the meter.

Distinction Between Classes of Different Circstances

In the higher rental houses the gas company does not fix pay-as-you-go meters at all, but demands a deposit against which it fixes the regular meter. It also makes a charge for the gas stove which can be rented from the company, provided the consumer does not wish to own his kitchen range himself. No gas fixtures are supplied and there is no limitation as to the outlets required. The gas company makes the connection between the kitchen range and any other gas stoves free of charge. Its "real" property rights, however, cease with the approach to the meter.

Some time ago the gas company found that many consumers were installing electric light. It was found that two reasons contributed to this tendency. One was the slow deterioration of the old fixtures requiring a heavy expense for renewal, the other the greater convenience in handling electric light. The company, therefore sent one of their officials into the houses of the bigger consumers to study the situation. It was found that many of these houses had old fashioned but sometimes very artistic fixtures which only needed good repair to be made like new. The representative suggested that these old fixtures in some cases would be too valuable to be discarded and undertook to have them completely repaired by the gas company free of charge. He also advised the purchase of the more modern lighting contrivances that can be employed together with gas, as incandescent lights, etc. By-passes, pneumatic lighting appliances also were introduced to the consumer.

It had been always the practice of this gas company to make as much use as possible of the local distribution facilities. While as a matter of practice a selection of high-class gas lighting fixtures were shown in the show rooms of this company it was nevertheless not intended to sell these, but likely customers were directed to the hardware dealers in the town.

French Problem One of Distribution

The French problem to-day is principally one of distribution. The gas industry has suffered heavily in the northeast of France and the plants in question will not have to rebuild only their generators and general station equipment, but they will have to relay actually all their piping, their lighting outlets and other distributing material. Owing to the great cold which is experienced in this part of France during the winter it is necessary that the pipes be laid deeply in the ground, which, to accomplish, may take a long time. In the meantime the readily erected and operated electrical enterprises will have the whole field to themselves and it is not unlikely that many gas plants will be replaced by an electrical central station. This is a development not exactly to be desired in the interest of the French gas industry, but it is not known yet what the French gas engineers will do to prevent it. Following other European examples it is possible that they also will facilitate the use of gas by improving the methods of its use.

Many Proposals Copied From American Methods

Many of the various proposals to strengthen the sale and distribution of gas in Europe is copied from American examples. Our modern gas plants no doubt are the most advanced in their selling methods and the European plants are merely transplanting American experi-

ence to European soil. But the European enterprises, especially the English, seem to have added to the American method by making it more pliable.

They have introduced a human element into the distribution of gas which we do not have in our own market. The British gas companies work to-day on the principle that nothing counts but success, that if an end has to be reached it is the method that has to give way and not the end. Having once reached this fundamental position it is easy to adjust the whole sales policy of the industry. We may possibly say that we follow the same practice in our own market. But while this may be true in a general way it is not true in its most essential parts.

A small example may show the difference between the two methods. Let us return again to our small English city. To make possible the introduction of gas and to retain the market the gas company had to make certain rules, which, as was explained, necessitated a different treatment of different groups of customers. The principle involved seems to be that the large consumer should help to pay the expenses for the equipment of the small consumer, but that the smaller consumer has to pay a slightly higher charge for the gas used by him. On the other hand the limitation in the number of lighting outlets also limits the consumption of the small consumer as compared with the unlimited consumption of the big consumer. Upon this system the gas company has now supplanted a top layer of improvements. It has sold automatically controlled gas water heaters, gas irons, special burners, all articles which were not conflicting with the goods generally carried by the hardware stores. Some of these improvements have not caught on and only a small quantity were sold. Such an occurrence would have led in our own market soon to a complete discontinuance of the line. The purchasers would not have been able to replace broken parts and the whole expenditure would have been wasted. Not so our English gas company. Even the failures of the distribution campaign have been carefully preserved. The purchasers are able to buy spare parts and the line is continued even if it means a loss to the company.

The effect of this policy is not to be underestimated. The individual consumer of gas, especially that consumer who uses gas only, is to-day a very appreciable factor in the competitive position of the gas industry. One contented consumer helps to retain ten. One discontented one who leaves gas in favor of electric light will soon bring twenty others over to the use of electric light. It is, therefore, very important that the consumer of long standing should have no grievance. If he has bought a certain article he should be secure in the continuancy of its possession and it should not be made useless to him by the gas company discontinuing it. So there is the example of a small upright burner propagated by the gas company and sold by the hardware dealers in that city. The hardware trade, after a while, lost interest in the article and the original purchasers had difficulty of getting the special chimney required for this burner. As the hardware dealers were disinclined to renew their stocks the gas company took it upon itself to hold a stock of these chimneys, leaving it to the public to buy it either direct from the company's store or from a hardware dealer who always could have it from the company at a reduced rate.

It may be said that the same novelty has been introduced by several gas companies in this country. It has been dropped again and many gas consumers at present have difficulty in obtaining spare parts.

This article was sold originally on an instalment plan. Instead of increasing the sales chances by continuing this policy, it is now sold only against cash, which naturally reduces very much its distribution, notwithstanding the fact that it is one of the best articles ever introduced to make gas lighing popular with the average consumer.

The next years will be of considerable importance to the gas industry in Europe. If it succeeds in re-establishing itself without losing too much of its pre-war territory its future prosperity seems to be secure. If it should be superseded in many places by any other form of lighting its financial position will be weakened to an extent seriously impairing its effectiveness. The development in Europe is well worth watching.

Missouri Public Service Commission on the "Readiness-to-Serve" Charge Principle

In the Sedalia gas rate case the Missouri Public Service Commission approved the readiness-to-serve charge principle as follows:

"In fixing the form of rate schedule, we have approved the company's suggestion of a service charge in lieu of the more common minimum charge. We believe that it is the more equitable in that it more nearly assigns to each consumer the costs actually incurred by that consumer. If a consumer is living in a house adjacent to a street containing a gas main, he costs the company nothing until he becomes a consumer. As soon, however, as he elects to use the gas, the company is put to an additional expense, regardless of whether the consumer uses any gas. A meter is installed. It is read every month, the bills are made out, collections are made, the meter and service pipe are kept in repair, in addition to the interest and depreciation of these items. There are also some gratuitous services and inspections for which no charges are made. While we have not computed the exact costs of this personal service in this case, the items are well known generally, and have been estimated by the company at 50 cents per meter. This is not excessive.

"The minimum charge is more general and perhaps better understood at the present time. It is more discriminatory, since each customer may use gas to the value of 50 cents, and may be charged only that amount in the monthly bill, whereas he has not only used 50 cents' worth of gas, but he has incurred customer costs, which we might call personal costs, to the amount of another 50 cents. This is unfair to other consumers who must make up the other costs.

"Objections to the service charge are usually based on a misunderstanding as to the purpose thereof. Consumers will argue that no other line of business attempts to maintain such a charge. In other lines of business this charge is not practical, and is not applied for that reason. The fundamental fact is that in other lines a merchant can refuse to deal with an unprofitable customer or make up the loss from other sales. Public utilities, however, must treat all alike. They must furnish service to all persons who will comply with reasonable rules, and in order that some consumers may not be burdened with the costs incurred by the more unprofitable, these unprofitable consumers should at least pay the expenses actually incurred in serving them. The service charge approaches this much more nearly than the minimum charge."

Amazing to Observe Extent to Which Property Is Confiscated, Under Guise of Rate Regulation, with Hardly a Protest Being Raised by the Victims

George N. Webster Sees in Theoretical Depreciation a Menace Alike to Public and the Investor

The most serious menace to which investors in the securities of public service corporations are exposed to-day results from their failure to comprehend and to combat unsound and destructive theories of valuation, which, when employed in the determination of the value of their properties for purposes of rate regulation, operate to confiscate a very substantial percentage of their investment, according to George N. Webster in a paper issued under his name.

The term "confiscate" is used advisedly. If an investor has expended, for example, $100,000 in plant and equipment devoted to the public service and has rendered service therewith for a number of years at legal rates, yielding a legitimate return upon his investment and nothing more, and has collected from his patrons nothing representing a return to him of his investment or any part of it, and if his property is then appraised and, as the result of the method employed, is found to have a present value of, say, $70,000 and the rates he is permitted to charge are adjusted so as to yield a return on only $70,000, then his investment, to the extent of $30,000, *has been confiscated.*

Solicitation as to Weal of Investor That Is Not Borne Out in Fact

When it is considered to what extent owners of property are protected by Federal and State constitutions, Federal, State and municipal laws, municipal and police regulation and a vast legal machinery, against the confiscation, expropriation, seizure or theft of their property and by what simple means these agencies of protection may be invoked in behalf of the individual or corporation, it is amazing to observe the extent to which property is confiscated under the guise of rate regulation, with hardly a protest being raised by the victims. They are bewildered by reiterated protestations that justice must be done to investors, in the very opinions which destroy, in part, their investments.

Furthermore, when it is considered that the adoption of these methods has already resulted in the confiscation of hundreds of millions of dollars invested in public utility properties, and that its general adoption would result in the confiscation of several billions more, it would appear as though it were high time for those whose interests are thus threatened to bestir themselves in defense of their properties and for those who are clothed with authority and power to determine rate cases, involving a consideration of the element of property, to inform their minds as to the fundamental economic facts, which are of paramount importance and which must be given controlling consideration if the interests of the public and of the investors are to be conserved.

Neither Can Be Advantaged at Expense of Other

No one will dispute the fact that the interests of the investor and of the public are so interwoven and interdependent that neither can be advantaged at the expense of the other nor exploited for the benefit of the other; that each must share in the other's prosperity or adversity, and that they who hold to the contrary and whose activities disregard this fundamental fact are either shortsighted mischief-makers or demagogues.

Not a little of the pernicious activity which, for the past ten or fifteen years, through drastic rate regulation based on false theories of valuation, has been sapping the vitality of our public service companies and paralyzing their efficiency may be attributed to German propaganda, the mouthpieces of which have included certain politico-scientific periodicals of supposed respectability and patriotism, at least one of which eliminated evidence of its German connections in Berlin from its title page only when we declared war upon Germany.

The method of unsound valuation against which this article is directed may be described chiefly as the *"cost less depreciation"* method. The *"cost"* may be "original cost," "average cost" or "present cost." The *depreciation* which is deducted therefrom, and which may be said to have its origin in the concept that used property is less valuable than new property, is based upon the assumption that used property becomes uniformly less valuable during the period of its alleged life expectancy, starting at 100 per cent value and ultimately reaching zero value. The amount to be deducted is computed by finding the ratio of the expired life to the assumed total life and by applying that ratio to the "cost"; the amount thus obtained, deducted from "cost," is supposed to represent the "present value."

Lack of Broad Knowledge the Basis of a Menacing Delusion

The advocates of the depreciation theory would state the formula in this way: A unit of equipment costs $10,000; it had a life expectancy when installed of thirty years; ten years have elapsed; ten years is one-third of thirty years; one-third of $10,000 is $3,333.33; this deducted from the "cost" leaves the "present value" of the unit of equipment as $6,666.67.

It is not conceivable that anyone could give the

subject of depreciation of the kind here illustrated serious consideration without discovering its utter fallacy. That so few have raised their voices in protest against it must be attributed to the fact that few have really considered it seriously. These, who are unalterably opposed to the theory, include some economists, some members of the judiciary, a few of the public service commissions, some executives of corporations and some members of the legal, engineering and accounting fraternities. They have discovered that the question is not one of engineering, nor of accounting, but one of economics and finance and the legal protection of property rights.

There are many engineers of honest intention who pretend, or even think, they have knowledge of this subject, who, while competent in the ordinary branches of construction engineering, are utterly lacking in a real and fundamental understanding of this dangerous fallacy of "theoretical depreciation."

Problem One of Applied Economics

The problem is, in fact, not one of engineering, nor is it one that engineering training fits an engineer to properly understand. The same may be said of the accountant and his training. The subject is one primarily of applied economics, and must be studied from the standpoint of the mutual economic interests of the consumer and the investor.

There is much to learn and many pitfalls of false logic and misleading partial reasoning to be avoided and combated. So far as the honest engineer and accountant is concerned, in great part his countenance of the error has resulted from his assumption that the problems involved are simple and through his acceptance of the superficial conclusions of specious presentations.

Those who advocate it as a business—the professional depreciationists—are in a class by themselves. We will speak of them later.

Strangling the Public Service Companies

The most sinister support which the depreciation theory receives may be traced to socialistic propaganda. Concededly, the ultimate goal of socialism is State ownership of all instrumentalities of industry. The immediate objective is State ownership of all public utilities, or State operation *without* ownership. The so-called *"progressives"* in the Republican and Democratic parties co-operate with the socialists in the attack on the immediate objective. The socialists cannot expect to attain their ultimate object of State ownership, or State operation *without* ownership, of all industries and all property until they have first brought under Federal, State or municipal ownership or operation *all of the public utilities*. For the accomplishment of the latter they have a perfectly definite, settled program, viz.: the strangulation of public service companies through rate regulation, service regulation and taxation to the point where the companies themselves will seek relief, in public ownership, from absolute bankruptcy and accept almost anything they can get for their properties. One means to this end is to insist on franchise requirements adapted to periods of lower prices, as in the case of the street railways. An equally efficacious operation is to exploit the theory of depreciation as a means of reducing value of public service properties to a bargain basis. That the application of the theory in any particular instance results in immediate partial confiscation is what commends it to them. They would confiscate all of the property if they could do so. As this class, however, constitutes but a negligible minority, it may be assumed that its activities will not long delay the universal recognition of fundamentally and economically sound principles in rate regulation. There are unmistakable signs that the country is exasperated by radicalism.

Second-Hand Furniture

Those who have been impressed by the theory have been beguiled by false analogies. They have been led to liken a railroad system, representing an investment of millions of dollars and composed of a myriad of units of plant and equipment, to an article of furniture, a suit of clothes or some other familiar object, and to believe that as the used table has lost some of its value so the used railroad has lost some of its value; that railroad fares should be based upon "value" so conceived and that a *used* railroad should charge a lower fare than a *new* railroad. The fact that the analogy, however plausible, is fallacious to the point of absurdity has eluded their understanding.

The analogy is false because it assumes, in respect of an instrument employed in producing a service, that its *age* affects the value of the service rendered and the price which should be charged therefor. The falsity of the assumption becomes at once apparent when it is considered that the individual, as the possessor of a chair and table, and the railroad company, as the possessor of railroad plant and equipment, are, in a sense, in the same position in regard to their respective properties. In both cases the properties, by performing their respective functions, enable their owners to *render service*. The functioning, under the direction of the railroad company, of the railroad plant and equipment enables the company to supply a railroad service. The functioning of the chair and table, as office furniture, enables the individual to render service to his clients. He can transact just as much and just as important business at an old desk as a new one; the age of the chair he sits on is no criterion of his service efficiency nor of the value of the service he renders; not being a furniture dealer, the comparative value new and second-hand of his office furniture enters not at all into the determination of any of his business transactions, nor of the amount of the bills he renders for his services; and nevertheless he accepts offhand the proposition that the railroad fare he pays should be dependent, in a measure, upon the age of the upholstery of his seat in the train, even though he may be unable to detect from any visual examination whether it is one year old or ten.

When the services of a professional depreciator are retained by a municipality, it is in order that by the exploitation of his theory of depreciation a reduction in rates may be effected, not because the service has in any way deteriorated but solely because the plant and equipment employed in rending it, while in every way as good as new and functioning just exactly as well and possibly infinitely better than when it was new, is *de facto* not *brand-new*.

The professional depreciator refers to the plant and equipment as second-hand and disingenuously inquires if second-hand plant and equipment is worth as much as new plant and equipment. The answer is decidedly yes. Divorced from its earning capacity, a new plant would be only a heap of junk. Coupled with an earning capacity based upon the recognition of sound economics, justice and common sense, the second-hand plant and equipment in operation is worth substantially more than a corresponding amount of new plant and equipment. Aside from the advantage of having a market for its product and an established business, such a plant has "found itself," all the kinks have been ironed out, the plant organization has been perfected, and it is working a great deal more efficiently and economically than a new plant could possibly work.

Disregarding the Obvious Facts

In substance, the professional depreciator assigns to the various units of plant and equipment a second-hand value and then blandly asks if the value of the whole can be greater than the sum of the parts. This specious proposition disregards the obvious facts (1) that the investment of the owners is in the plant as a whole, (2) that the investment is not made for the purpose of creating a museum of second-hand plant and equipment but because it *has to be made* in order that the investors may render a perpetual service in accordance with their franchise, (3) that the investment remains intact until it has been repaid in part or in whole, and (4) that there has never been any contract or agreement between investors and their patrons for the repayment of any part of the investment in plant or equipment in *service*.

The *modus operandi* of the professional depreciator, as stated, is to guess at what he terms the "life expectancy" of the plant and equipment in service, and, having computed the percentage of "expired life," he uses the same percentage to compute "expired value." He does not like to say "expired investment." He avoids the use of the word *investment*, because he knows it will tangle him all up. He does not want to be asked to explain what he means by *expired investment* or *what has become of the expired investment;* or to explain how an investment can *expire*. These things embarrass him. He sticks to *value*, because he knows that *value* is an elusive and ambiguous term and that there is less likelihood of someone pinning him down to admitting that he *doesn't know what it means* than there is of someone pinning him down to an admission that an investment *cannot expire*. He knows nothing about accounts and less about engineering. In order to *perform* he has to have a figure to start with. If, with the help of an accountant, he can get the original cost of the property, he uses that and calls it "reproduction cost," although he knows it is nothing of the kind. If an engineering valuation *new* is presented to him he will generally accept it and call it, too, "reproduction cost." He is not particular. All he wants is a principal sum on which to use his depreciation method. From either he will deduct a percentage corresponding to his guess as to the percentage of the "expired life" of the property. He will, for example, guess that the life expectancy of the property is thirty years. He will guess that ten years of the life expectancy have expired. That equals thirty-three and one-third per cent. Therefore, the present value of the property is equal to the reproduction cost less thirty-three and one-third per cent. In order to appear really scientific, he calls his *present value* the *rate base!* Like a priest of some mystic cult, he signifies the exclusiveness of his special learning by the liberal use of a new and terrifying terminology. He displays weird mathematical diagrams, covered with wriggling, portentous lines like a robed soothsayer who surrounds himself in his darkened chambers with the mummery of outlandish alembics and astronomical charts. Thus these learned assassins of values impose upon city councilmen and public service commissioners and furnish a basis for what they are inclined to believe or what they deem it necessary to their political fortunes to believe, and, gathering their fees, depart. From the decisions of councilmen and commissioners there is an appeal to the courts on the law, but not always on the facts. Value is a matter of fact. The courts are unanimous in holding that value, in a rate case, is not "exchange value." What kind of value is it, then, that is not exchange value and yet can be expressed in dollars and cents? The best that judges can do is to say that "value is not a matter of artificial rules and formulas, but is a matter of judgment." Neither the courts nor the commissioners nor the alleged experts nor anybody else know what that value is about which they talk so solemnly.

Consideration of Age Does Not Enter

Even upon so violent an assumption as that of a man who has invested $10,000, in a non-competitive enterprise of definitely limited life of say ten years, at the expiration of which period his plant and equipment, still in perfect working order, must be scrapped, it could not by any process of reasoning be demonstrated that the price charged for the service rendered could be reduced, at any time during the period, because, forsooth, his plant was older at the end of the first year than when he started and became progressivly older until it was scrapped. The reason is obvious. In this case, which as will be shown, bears no analogy whatever to a public service company, if the investor is to come out whole, he *must* collect, in his rates, in addition to the cost of his service, (1) interest on his investment, uniformly, during the entire period, and (2) an annual sum which at compound interest will, at the end of ten years equal the amount of his investment. In the case of a public service company, however, there is no reason or justification for those amortizing in whole or in part the investment in plant and equipment.

The world is expanding. This country is expanding more than any other. There are centuries of expanison before it. Then why dream of *amortizing* investment in public service companies? Almost without exception they are *growing* not *shrinking*. It will be time enough to talk of amortizing investments in them when, if ever, there are signs of *shrinkage*.

The consideration of *age* enters no more into the question of the *rates* of a public service company, which is able to and does render the service it was organized to render, than does the *age* of a *taxicab*, or of its *driver*, or of the *clothes he wears*, enter into the question of the *fare*. A driver twenty years old with a new car and a new uniform can charge no more than a man of sixty with a ten-year-old car still operating efficiently. It is

transportation the passenger is buying—and he expects to pay *uniformly* for a *uniform service*, regardless of the age of the equipment.

Uniform Pay for Uniform Service

Nor does a lawyer or a physician expect to regulate his fee by the age of his office furniture, as one might think he should from the arguments of the professional depreciator. A laborer of twenty with a new pair of overalls draws the same rate per diem as the laborer of sixty with a pair of wornout overalls. Both do a uniform day's work for a uniform day's pay and *age cuts no figure* so long as *uniformity in service capacity* exists.

A celebrated lawyer who died within a year and who bequeathed many millions of dollars to a great college had in his office the simplest and oldest furniture the writer ever saw. Furthermore, his earning capacity increased annually to the day of his death at the age of seventy-four. He probably never realized what a liar he was making out of the professional depreciationist.

The fraud which would have been perpetrated upon the public if the theory of "depreciation" which is being exploited as a profession by demagogues and impostors, had been adopted by public service companies years ago, when they were starting in business, would have been on a par with the fraud which these charlatans now undertake to perpetrate upon the companies. This would be true even if there were such a thing as life expectancy in plant and equipment. But there is no such thing. Aside from what may be deemed to be the *wearing parts* of a complete system, including such small units as rails, ties, poles, gas and electric meters, etc., *retirements of units for wear and tear do not occur*. They have, therefore, no determinable life. The date when, if ever, they will be withdrawn from service because of obsolescence and inadequacy cannot be even approximated, because the date and character of future inventions and of the development of the community cannot be foretold.

The so-called "depreciation" theory involves the creation of a useless reserve. In the case of the Brooklyn Edison Company before the New York Public Service Commission for the First District, a very thorough detailed appraisal was made of the Company's property, and the Commission's engineer demonstrated that under the so-called theory of straight line depreciation, the company would acquire a depreciation reserve, on a property amounting to twenty-four millions of dollars, of something over eight millions of dollars, *which would never be used or useful to the company or the consumer.* The methods and figures were set forth clearly in the testimony in the case. Such a reserve is construed by professional depreciators as evidence either of the repayment to the investor in the utility of a part of his investment, through the medium of the rates which he charges for his service, or of an investment on the part of the patron, through the same medium, in a part of the plant and property employed by the utility in the public service. The first theory would be urged where the volume of business done by a utility was stationary; and the second would be urged where the growth of the business involved additional investment equal to or exceeding the amount accrued in the so-called "depreciation reserve."

Even where no "depreciation reserve" whatever has been created, the professional depreciators argue that one should have been accumulated and that failure to do so is evidence that the property has been "milked" through excessive dividends.

The fact that the so-called "accrued depreciation theory" will not stand the test of application to the future is evidence that it cannot be applied to the past. It cannot be demonstrated, for example, that from the standpoint of either the rate-payer or the company it would be a good theory to impose upon the patrons of the new public service company. Thus considered, the glaring inconsistencies of the theory become at once apparent. It can be proven clearly and conclusively that a so-called "depreciation reserve" actually and knowingly created at the expense of the public, by such a company, if such a thing were possible, could not serve any useful purpose either to the company which collected it or to the rate-payer who paid it in addition to the actual cost of the service he received. It would be of no advantage to the company, because (among other reasons) it would add nothing to its investment upon which it would be allowed to earn a return. It would be of no advantage to the rate-payer, because it would add to his rates, without giving him, as an individual (and he must be considered, in this connection, only in his individual capacity), anything in return for his money; he would get title to nothing in the way of property, and the fact that future rate-payers might benefit from the amounts exacted from him would not interest him in the least.

Consider the History of the Average Gas Company

For a concrete example, consider the history of the average gas company: It is organized, capital raised, a plant constructed, the latest and best types of apparatus installed therein, and mains, services and meters installed on the district to be served. Do the projectors visualize the plant and equipment in which their capital is invested as moving relentlessly towards the scrap-heap as humanity marches from the cradle to the grave? Verily they do not. Do they construe the situation as demanding that they begin, at once, to collect from their consumers, in the rates, over and above the cost of the service and a fair return on the investment, the investment itself or any part of it? Such a thing was never attempted or even dreamed of. They look upon the permanency of their plant and equipment as second to nothing ever created by mortal hand. They know that there will be wear and tear which will involve repairs which, as they are made, will and should constitute a part of the current cost of the service. They know that such cost, as a matter of practice, is not, and should not be, collected in advance, for the obvious reason that the earnings for each year should bear the burden of the maintenance expenditures for each year, otherwise the statement of results of a year's operations, in so far as the revenue and expenses are concerned. is distorted; that to exact from rate-payers, during a given year, an amount in excess of the expenditures for maintenance for such year is "robbing Peter to pay Paul," that is, if the amount thus exacted is used to pay for future maintenance and if future patrons benefit thereby; that if it is not so used, such an exaction results in the creation and maintenance of a reserve which will be forever useless for the purpose of making replacements, which is the purpose for which it was alleged to have been created; that to deal with maintenance costs as they occur is to deal with facts, but that to attempt to anticipate them is to embark upon an uncharted sea of idle fancy and speculation. They take no heed whatever of future obsolescence or inadequacy, for two reasons: first, because not being clairvoyant, they cannot foresee when,

if ever, obsolescence or inadequacy in respect of any unit of plant or equipment is going to occur, and, second because, being business men, they know that when, if ever, obsolescence or inadequacy does occur, it will result from an advance in the art or a development of the business which should and will, *itself*, take care of the loss involved in the displacement of the retired unit of plant or equipment. They know, therefore, that there is no economic ground upon which they could demand from their patrons a return on their investment or any part of it. They know, furthermore, that they could not collect it if they attempted to do so, for two reasons: first that the public would object to paying for the service any amount in excess of the *cost* of it plus a fair return on the investment necessary to render it; second, because an attempt to build up a business with a rate thus burdened with a purely fictitious and uneconomic charge, would result in failure and bankruptcy.

What actually occurs may be described as follows:

Assume the case of a gas company, starting business in a small and growing municipality.

The Successive Steps

It has been organized in response to an urgent demand on the part of the community for a supply of gas for illuminating, domestic and commercial purposes.

Its organizers are citizens having some money to invest and some credit.

The territory is canvassed and as many contracts for service are made as can be obtained.

A franchise is obtained, a consulting engineer is called in, and estimates are made of the probable present consumption and what may be reasonably expected in the way of annual increases therein.

A price is fixed which, it is estimated, will ultimately yield a return upon the necessary investment. The investment in land and manufacturing plant is of necessity based upon an estimated future demand substantially greater than that which can be expected to be realized at the outset.

A distribution system is installed, which covers the more densely populated section of the municipality.

The business of supplying gas is begun under conditions which make it impossible for the company to recover all of its operating expenses.

Then comes a period of discouragement. The company is in financial stress. All the anticipated business may not have been realized (it seldom is). A receivership is discussed. Temporary loans, to meet payrolls and bills for materials and supplies, obtained from those who have already sunk capital in the enterprise, tide the company over this critical period of its career.

By vigorous canvassing and judicious extensions, the utilization of the property is increased, so that the gross revenues exceed the operating expenses and leave a balance toward overdue fixed charges

The plant and distributing system being new, the maintenance charges are comparatively negligible.

As business grows without proportionate additional investment of capital, net earnings increase; likewise the cost of maintenance through repairs and replacements begins to be a factor in the cost of operation.

By the time the company is fairly on its feet and is able to pay a return upon the money invested in it, the cost of maintaining the property by repairs and renewals has become normal. In other words, it has reached an average annual relationship to the company's gross earnings, and such relationship thereafter will vary but slightly. That is to say, a sum representing a given percentage of the gross earnings (which may be expressed in terms per thousand cubic feet of gas sold) will suffice to keep the property in a high state of service efficiency.

The foregoing is what happens in actual practice and is a true picture of the early history of practically every utility.

Had the company undertaken at the outset to collect from the public a rate which would have included a return to it of half, or any part, of its capital within a given number of years, it would have gone bankrupt, unless its patrons, aware of its intention so to do, enjoined it from charging a rate for its service which included such return or repayment of its capital.

It is impossible to imagine a utility so situated attempting to collect from its patrons, during a period when it was struggling for existence, a useless reserve which could be construed, upon final analysis, as nothing else than a return to it of a part of its investment, or that it would be permitted to do such a thing. And if, up to the time it had gotten upon its feet and was meeting, out of its gross earnings, all of its current requirements for the maintenance and upkeep of its property, it had collected no such reserve, what excuse would exist thereafter for its undertaking to do so?

Thereafter, normal and reasonable rates for gas will be such as to enable it to meet its operating expenses, to maintain its property by renewals and replacements when necessary, and to earn a fair return upon its investment. Such being the case, the accumulation of a reserve would involve an unreasonable increase in its rates.

Money Put Into Construction Cannot Be Withdrawn

Does any one imagine that it would be permitted, much less ordered, to increase its rates for the purpose of creating a useless reserve? If nothing may be properly collected for that purpose, then it is obvious that no deduction may properly be made from its investment; in other words, no depreciation exists in respect of its property.

Investors, as a class, engage in public service enterprises because they deem them to be not only profitable but permanent. Money put into railroad construction, for example, can never be withdrawn. To *unmake* a railroad would restore no amount of cash to those who constructed it. It would require the expenditure of almost as much money in the unmaking as in the making —if not more. The same is true of gas-mains, electric-conduits and all sub-surface structures required in the distribution of gas, electric, telephone, telegraph, steam and water service. It would not pay to dig them up. Similarly, there can be no recovery of money invested in plant and equipment. There is no considerable market for second-hand plant and equipment. Therefore, were it not for the *permanent* character of the public service business there would be no public service, because no investor would embark in it as a business. Assured, as he has every reason to be, of the permanence of the business, he looks, with equal reason, for a fair return on his investment. In other words, he expects to collect enough for his service, in excess of the cost of rendering it, to cover not only bare interest on the amount of his investment but a reasonable margin of profit besides. The cost of rendering the service includes, of

course, the cost of maintaining his plant and equipment in efficient operating condition by repairs and renewals, as well as the cost of amortizing the investment in plant and equipment displaced from time to time in order to effect improvements and economies made possible by the advance in the art of rendering the particular service in which he is engaged. In the exercise of his right to earn a fair return upon his investment, he is entitled to and receives the protection of the courts.

What Rates Include

The amount which he collects in excess of the cost of rendering the service, is his profit, to be disposed of as he may see fit. That is to say, he may pay it out in dividends or carry it in a surplus account or segregate it and carry it in a reserve account, or he may do all three of these things. The profits which he does not take out in the shape of dividends he may employ in the acquisition of additional plant and property; and when thus employed, they become an investment of his in the same degree precisely as does the cash represented by the company's outstanding capital stock and obligations. He expects to have this investment maintained, without impairment, out of the rates which he collects for his service.

The rates which an investor charges for his services include nothing which may be construed either as a return to him of any of his investment or as a sum advanced to him by his patrons to be invested by him for their account in plant and property. No investor has ever been a party to such an understanding; and it cannot, therefore, be assumed that, without his knowledge or consent, amounts were included in his rates for either of the purposes named. The reasons for this are obvious and will be elaborated later.

On the other hand, the point of view of the public—that is to say, the patron of the investor—is as simple as the point of view of the investor. He is a buyer of service. He pays for it a price which he understands represents two things, first, the cost of rendering the service, including the repairs and renewals of the plant and equipment employed in rendering the service, and second, a profit to the investor. So long as that profit is fair and reasonable, *i. e.*, equal to a fair and reasonable return on the investment, he is not interested in the disposition that is made of it; that is to say, he is not interested in whether it is all paid out in dividends, or whether part is paid out in dividends and part set aside in surplus and reserve accounts and invested in additional plant and equipment. He knows that an investment of undivided profits in plant and equipment is in the nature of a short cut amounting to the same thing as a payment of all the profits in dividends and a reinvestment involving an issue of securities and that the difference between these two methods is one of form and not of substance. He does not consider that there is included in the rate he pays for the service he receives any amount representing (a) return to the investor of a part of his investment or (b) an investment on his own part in some of the property employed in rendering the service which he receives. Being satisfied that the rate which he pays covers the two items heretofore enumerated, viz., the cost of the service and a reasonable profit to the investor, he would not consent (if he were consulted) to have such rate increased in order that there might be included therein an amount designed for either of the other purposes named. Therefore, there is no ground on which to base an assumption that, without his knowledge and without any intent on his part, there was ever included in the rates which he paid for the service he received any amount in addition to the cost of the service and a fair profit to the investor.

Notwithstanding the manifest absence of any knowledge or intent, on the part of the investor or his patron, to engage at any time in any such preposterous transaction as is alleged to have been in effect, we have nevertheless in this so-called "depreciation theory," a theory by which its advocates attempt to establish a division of the property operated by a utility between that which is owned by the company and that which is owned by the public. According to these professional depreciators, the company may earn a return upon so much of the property as the depreciators are willing to concede belongs to the company; but upon that portion of it which they allege belongs to the public, no return may be earned. It is to be hoped, however, that we have not yet reached the stage, in this country, where title to property may be disputed upon so flimsy a pretext.

Even if it were deemed advisable that henceforth, as a matter of policy, an investment should be made by the public in properties operated by utilities, through the medium of the rates charged for the service, it is difficult to conceive how such a policy could be made effective. It would be necessary, for example, that the policy should become universal. It would then be necessary to ascertain by inventory and appraisal the value of the property of every utility in the country. Rates for service would have to be increased universally, so that there might be included therein a percentage designed to apply either toward the purchase of existing plant and property or toward the purchase of plant and property to be acquired thereafter. Thereafter, the amount thus invested might be known; but how about the property in which investment has already been made?

In view of the fact that all plants would be acquired by utilities in their own names, how would the title thereto become vested in the public? The rate-payers of yesterday are not the rate-payers of to-day and the rate-payers of to-day are not the rate-payers of to-morrow. Why should the rate-payer of to-day pay for something which is to be owned by the rate-payer of to-morrow? In which of the various classes of property required by a utility would the public prefer to have its investment made, and for which class of property would the utility itself have a preference? It is but necessary to consider these few questions to establish the absurdity of the whole proposition.

Furthermore, there is not the remotest possibility that the public, if fully informed, would lend its approval to such a hare-brained proposition.

Begins Imagining Premises and Emerges Pure Nonsense

The effect of the propaganda of the professional depreciators and of the decisions of some courts and commissions which have appeared to sustain it has been to render investors uneasy.

Those who are already in are not going in any deeper, and those who are not in will stay out until this propaganda has had its final quietus. This attitude on the part of investors is a distinct and palpable public disadvantage. Confidence in the stability of their investments is indispensable to the ready flow of capital to meet the public demand for in-

creased and improved service and for the development of vast territories at present without railroads, gas, electric, telephone or telegraph service. Is it not the time to call a halt on the activities of men whose principal aim in life appears to be to impair the investments in properties devoted to the public service and whose usefulness is on a par with that of the Russian Bolsheviki?

The so-called "depreciation theory" begins with imaginary premises, progresses through academic maunderings and emerges as pure nonsense. It has not a leg to stand on in public policy, economics, finance or common sense. Nevertheless, so plausibly has it been presented and so active has been the propaganda in its behalf that some courts and commissions have accepted it as the law and gospel of utility valuation. It has even been accepted and availed of by some public service companies, the result, it must be assumed, of a superficial consideration of the whole subject of plant maintenance and upkeep. Some members of the engineering fraternity who by training or study are neither economists nor financiers, but who have been impressed with the magnificent vocabulary of this new pseudo-science, have swallowed the bolus whole. Other engineers who have studied the questions and who have not been impressed by the claims made for this new elixir of life have rejected it altogether. One State commission has already reversed itself in this regard and has eliminated from its accounting system any recognition of the theory.

An inspection of the plant and equipment of an operating company, at any time, would disclose nothing more respecting the life expectancy of the units thereof than an inspection of it at the time the company started business. It would disclose, however, in respect of the wearing parts of such plant and equipment, including such small parts as rails, ties, poles, gas and electric meters, etc., that at some time, more or less remote, as the case might be, repairs and replacements would have to be made to make good wear and tear. But just as the current income is taking care of similar current repairs and replacements, the future income will take care of future repairs and replacements as they become necessary. To attempt to keep plant and equipment always in a condition as good as new would be wasteful and extravagant. It would add immeasurably to the cost of the service without producing any compensating advantages to the rate-payer. In other words, the *service condition* of a plant and equipment may be as *good as new* without the plant itself being in a condition as good as new. It adds nothing, for example, to the serviceability of a structure to paint it more often than is economically necessary. It adds nothing to the serviceability of a machine to replace a wearing part that is still giving as good service as a new part would give.

At any time an engineer may discount—not accurately but approximately—the ultimate cost of the repairs and replacements of working parts, including small units, which a physical inspection of a plant and equipment discloses will have to be made in the near or remote future. He may estimate the cost of replacing a rail, he may make a more or less wild guess as to the date when it will have to be replaced, he may adopt some rate of interest; and with these three factors and an interest table he may determine the present sum of money which, at the given rate of interest, will be the amount which it will ultimately cost to replace the rail. He may make a similar computation with respect to a gas meter or a pole supporting electric wires. But when he has done so, he has determined nothing as to the investment in the property. The condition of the particular units of plant and equipment on which he bases his computation is only a temporary one. It is a mere incident of plant and equipment operation. It possesses no economic significance whatever. As the sum computed will be paid out of the rate collected from the rate-payers, as repairs and replacements mature, it may be described as an "unmatured obligation" of the rate-payers to reimburse the company for maintenance of the plant and equipment, through the medium of the rates which they pay for the service they receive. There is no more reason for collecting such expense in advance than there is for collecting *this* year the salaries and wages to be paid *two or three years hence* and as a matter of business practice it is never done.

The fact that, as a matter of accounting practice, some companies have a repair suspense account or a renewal and replacement suspense account to equalize the annual charges against the earnings, for repairs or renewals, is, of course, a matter of no consequence whatever. Such accounts at any given time may be either debit or credit accounts.

Since there is no sound basis in public policy, law, economics or finance for collecting, in advance of the necessity for using the money, a so-called "depreciation reserve," it follows that where no such reserve has been created the investment remains unimpaired. It may even be assumed in cases where, under a mistaken conception of the problem of plant maintenance or under the compulsion of commission order, a "depreciation reserve" has been created that nevertheless the investment remains intact. In order to sustain the contrary, it would have to be affirmatively shown that the reserve actually constituted a return directly or indirectly of capital to the investor or that it actually represented an investment on the part of the rate-payers, with their knowledge and consent and with the company's knowledge and consent, in plant and equipment bought by the company, paid for with its money and to which it holds an indisputable vested and legal title. It would have to be shown that the earnings during the period the reserve was accumulating, plus the reserve itself, constituted more than a fair return—in fact, an excessive and illegal return—on the actual investment. The mere fact that the reserve was created through operating expenses instead of through income account is not controlling. Economic facts cannot be disturbed by the mere incidence of bookkeeping. Accountants are neither financiers nor economists. Questions of property rights cannot be determined by the entries they make in their books. In other words, the *substance* of the question cannot yield to the *form* which the accountant has chanced to observe in making his book entries. If by any other process of reasoning the investment may be concluded to have become impaired, then it is evident that property, which may not yet be taken by the direct action of the syndicalists, may be taken directly by ingenuous sophistries.

(*Continued on page* 121.)

American Gas Engineering Journal

SIXTY-FIRST YEAR

Published Weekly by AMERICAN GAS LIGHT JOURNAL, INC., 150 Nassau Street, New York, N. Y.

ELBERT P. CALLENDER, Pres. S. G. KRAKE, Vice-Pres. FREDERICK A. SOUTHWORTH, Sec'y-Treas.

EUGENE C. MILES, Editor

Subscription $3.00 per year, in cluding postage in the United States, Mexico, Cuba, Porto Rico, Hawaii or the Philippines; in Canada, $4.00; foreign, $500—Single Copies, 10 cents

Contents of This Issue

EUROPEAN GAS PLANTS ADOPT AMERICAN METHODS WITH ADAPTATIONS AND IMPROVEMENTS TO SUCCESSFULLY MEET GROWING COMPETITION BY L. W. ALWYN-SCHMIDT 109

MISSOURI PUBLIC SERVICE COMMISSION ON THE "READINESS-TO-SERVE" CHARGE PRINCIPLE... 111

AMAZING TO OBSERVE EXTENT TO WHICH PROPERTY IS CONFISCATED, UNDER GUISE OF RATE REGULATION, WITH HARDLY A PROTEST BEING RAISED BY THE VICTIMS 112

EDITORIALS 119

EFFECT OF THE WAR ON GAS COMPANIES 120

NEWS OF THE GAS INDUSTRY 123

PERSONAL NOTES 130

CONSTRUCTION NOTES 131

As the Journal Views It

And the Records Ask Why

Human memories are short lived. Printed records are not.

Press reports describe to us the almost unholy glee experienced by some questionable guardians of the public weal when they "wrung" (?) from a gas-company construction engineer the "admission" that at this time of the year, broiling August, several plants of the company are actually making gas. "And this company wants a return on the investment on plants that are not actually at this moment putting out gas," in effect these champions of the people tell us in effect.

What audacity, like unto the impudence of the railroads were they to protest if we informed them of our intention to decline to pay interest on their investments in tracks except for such periods as trains are actually running over them.

To the particular guardians of the public weal in question we would refer an article published in the AMERICAN GAS ENGINEERING JOURNAL for Jan. 12, 1918, on page 25.

In this article they will be reminded that all the plants the company had available were none too many in a recent serious crisis. Had the company been more sparing in plant investment it is quite possible that many young, now older children, who are now scampering merrily over green parks, would instead be sleeping silently under the equally green sward of various cemeteries. And the children were not all who might have suffered.

If it is the best public policy that gas-company plant investment should be kept down to the barest minimum then indeed we are in need of a new breed of gas engineers. Those we have are all atremble if they have available less than twenty-five per cent surplus capacity.

Others more conservative are constantly clamoring for even more.

It does seem an extravagance to be paying interest on millions of dollars of investment now in August when we cannot even think of made heat without mental distress, but it will not seem that way next January when the furnace falls short of warming our dwelling places and we realize the gas we have available to reinforce it is abundant for all needs. And there's the rub.

Unfortunately gas plants are not portables. We cannot erect them in months of need and sell them off each year when the need is past.

Prosperity and Strikes

It is a saying that periods of prosperity are signalized by industrial strikes.

There are indications aplenty, though the personal bank balances of many of us would not seem to confirm them, that we are now in a period of prosperity. Buying demand exceeds supplies in many lines, and much of the buying falls within the luxuries classes. And the saying is borne out in that strikes apparently abound.

It is an irony of fate that the fruits of present prosperity do not fall to the gas industry in general. It is prosperity to us insofar as there is no scarcity of demand for our product. But the shoe pinches in that the price at which we sell that product is generally out of our control.

Yet we reap the unwelcome by-product in the way of strikes. This is but natural. The class of worker who strikes is not enlightened to the degree of knowing the whys and wherefores of gas company finance. He doesn't know whether we are making or losing. Yet he does know that living costs are high, and that labor elsewhere is highly paid.

We have the problems of prosperity but the conditions of our regulation do not permit us to reap the fruits. It is but one more of those things we have to go through and we have already gone through many.

Sooner or later, however, the wind must change. Then, when things are easy, how much we will have profited in our present need for keeping for a protracted period the stiff upper lip. What a training we are acquiring in mental discipline and steadfast courage.

Sorry Days for the Superman

A new element has come into prominence in our industrial life. It is the fellow who mingles with the men, exchanges confidence with them, advises with them on a basis of equality, is, in short, in complete confidence with them—yet manages to produce the work.

This type has always been with us. It has always produced, though we were not cognizant of it, for the reason that we were so sure that so wrong a method could not get results, that we didn't even trouble ourselves to watch and see.

We rather leaned to the dominating type, the standoffish, black browed, intolerant fellow, whose very roar sent a tremor down along the whole line.

This type did produce. But it produced before even the commonest type of labor acquired the clear understanding of the "rights of man," as it seems to have acquired to-day. And, as we have since discovered, our loud roaring and hard-fisted type did not secure the maximum returns from the men under his authority.

The team-work organizer bids fair to accomplish this, and under considerably more difficult circumstances. He is with us, apparently, to stay, and to expand in the future.

To some of us, who have not yet readjusted our viewpoints, he's apt to prove somewhat of an annoyance with his assiduous nagging to raise this or that man's pay, to better the lot of this or that class, and to spend money eliminating what he opines is a dangerous condition in the plant, notwithstanding the record of ten years operation without one accident from that source. Yet who can say his advent is not a propitious one for all industries? Even the most stubborn of all of us in wishing for the "good old days" of pick handle and tobacco juice, grudgingly admit to ourselves that we feel more assured with the new type in command than we did with the old.

Effect of the War on Gas Companies

In the past three years 124 applications have been made to the Massachusetts Commission for authority to charge higher rates. Of the so-called "war-time" increases granted by the commission, thirteen have been permitted to remain in force. The Boston News Bureau has compiled a table showing the present maximum net prices per 1,000 cu. ft. of gas charged in eight cities of the State compared with prices in effect when the war broke out in 1914:

	1919.	1914.
Boston	$1.00	$0.80
Springfield	1.05	.85
Cambridge	1.10	.80
Worcester	1.10	.75
Lynn	1.15	.75
Newton	1.00	.90
New Bedford	1.10	.80
Fall River	1.05	.80

Present prices of both the Lynn and Cambridge companies are five cents lower than the war rates.

Next to the street railways, the gas companies were hardest hit by the war. As in the case of the railways, the gas makers were forced to readjust their prices and operating conditions. This was due to labor and exceptional costs in manufacture and distribution of gas. Earnings of the various gas companies, however, have been well sustained. Only seven of the fifty-nine producing companies of the State are failing to meet dividend requirements. In 1917, the first year of America's participation in the war, fifty-two companies paid out $3,898,515 in dividends, averaging 8.8 per cent on their capital. Figures for 1918 are expected to show but little change.

(*Continued from page* 118.)

An investor's property represents his investment, and is, in fact, his investment. It is immaterial that on the other side of his balance sheet his investment is represented by given amounts of capital stock, funded and floating debt, and surplus and reserves. The aggregate of these, corresponding with the aggregate of his assets, indicates his *book* investment, which may or may not be his *actual* present investment. In other words, if the land he owns has substantially enhanced in value, its enhanced value measures the amount of his investment therein. It is not necessary that he should sell it and buy it again and credit the increment in value to his surplus account in order to determine his actual investment. The courts of this State have so definitely decided.

Present Value Controlling Consideration

The Supreme Court of the United States has ruled that the present value is the controlling consideration in respect of *all property*. While it is obvious that there is no economic difference between the land and plant to which an investor holds title, it is still a question of *policy* whether, as to plan, a claim should be set up for recognition of the present investment therein, when present unit costs are *deemed* to be abnormal and temporary.

The question really hinges on whether an investor in plant and equipment devoted to the public service is in a different class from an investor in real estate, merchandise or salable commodities, in that he may not realize on the increment in the value of his property, by being allowed to earn a return upon such increment, however it may have been created, during the period that it may be shown to exist, but is forever confined to his original investment upon which he is entitled to earn a fair return; in other words, whether any injustice is done the user of the service if the rate he pays at any given time provides a fair return on the investment in the property devoted to his service, measured by the cost of reproducing the plant and equipment at that time.

It is not proposed to elaborate upon this theme here. Suffice it to say that, in determining a reasonable rate or in reviewing an established or prescribed rate, it is obviously the function of the court or commission to determine the *investment* upon which a fair return must be permitted. Whether this shall be the *original* investment or the *present* investment is for the court to determine. In either event, the investment must be deemed to be *unimpaired*.

It is equally obvious that it is the function of the engineer to inform the mind of the court as to facts and not as to theories of economics or finance or rules of law, about which an engineer, as an engineer, has no expert knowledge or experience. The facts, as to which the engineer is competent to testify as an expert, are the inventory of the plant and the original and present investment therein.

The court will base its conclusion as to which investment it will adopt upon the circumstances of the case. It is a matter for argument by counsel.

When an engineer, testifying in a rate case, expresses his conclusions as to the extent of present liability to make future repairs and replacements in terms of diminished value, he leaves his own jurisdiction to wander in that of the economists. Before he can justify any estimate of value he must know what value is. Is the depreciated value to which he testifies market value, or exchange value? Is it value estimated by considering what each depreciated item would sell for alone, or what the whole plant would sell for altogether? Or is his value estimated on consideration of potential utility and, if it is so considered, is it utility to the owner as a means of making money, or is it utility to the community served, measured by what the community would rather pay than lose the service and use the next best substitute? Is there such a thing as "use value" and such another thing as "exchange value," or is exchange value, either subjective or objective, the only kind of value there is? Or is the engineer measuring "value for rate purposes," and, if he is, what kind of value is it that is "value for rate purposes"?

What has an engineer to do with the thousand and one theories of what value is, and how shall we have the hardihood to attempt to measure it before he knows what it is that he is measuring? He may as well furnish charts showing average lengths of the beaks and tails of hippogrifs.

Engineering has to do with physical facts and measurements of physical bodies. It concerns itself with costs, both past and present. An engineer may testify as to such costs; but when he testifies that the value of plant and equipment has decreased in some specified amount or percentage, either because of assumed expiration of life of the units of which the plant is composed, or because maintenance, presently unmatured will, later on, make it necessary to expend money, he is usurping the functions of economists and courts. He is following some academic "method," without being able or competent to explain why "half life half value" or similar phrases have more significance than the linguistic efforts of a parrot.

On the other hand, an engineer may testify to the amount of the investment, either the original or present investment. If the books do not show it, he may estimate it approximately. That is his true function. He may estimate the probable original cost or the probable cost of reproduction at present prices. He may express the total as value, if he makes it clear that by value he means costs, computed on one basis or another; but, having made such an estimate of value on the basis that value means investment, he cannot properly reduce it after shifting to the theory that value means "what a thing will sell for," or that it decreases proportionately with a diminished store of potential utility. That is precisely what he does when he blithely converts "condition per cent" into dollars and cents under the heading "present value."

The investment stated by the engineer should not in all cases purport to be the amount of the entire investment which is to be considered in a rate case. The New York Court of Appeals has ruled, in the Kings County Lighting Company case (210 N. Y. 479), "wholly apart from the intangible thing called going business, the reproductive value to-day of the physical property would not necessarily include the actual and legitimate investment in tangible property which may have been entirely replaced, not because of depreciation but to meet advances in mechanical science, new conditions and increasing demands not reasonably to have been foreseen at the start. . . . In some manner and under some head-

ing a due allowance must be made for the investment in those elements." The engineer, if requested, may properly testify as to the amount of such investment, on the basis of cost of construction; but the matter of adding such amounts to his estimate of the investment value of property presently in use, or of disregarding such amounts, is dependent upon other questions. Has the amount of such investment been wholly or partly amortized by the rates? This is a question of accounting. Should any amount not so amortized be added to the rate base? That is a matter of law.

It is not too much to say that conclusions of engineering experts have been accepted by courts and commissions as based on facts wholly within the scope of engineering science, whereas they are partly founded on opinions as to economics, accountancy and law, although the whole basis of opinion has not been perceived either by the courts or by engineers themselves, and that no inconsiderable part of the difficulties with which public utilities have been struggling have their origin in the ready acceptance by courts and commissions of the opinion of engineers as to matters in which they, as a rule, are not qualified to testify as experts.

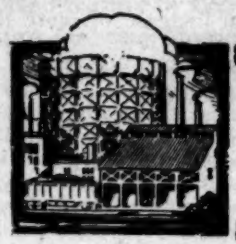
It is obvious that this subject is one which concerns and should engage the serious attention of every investor in public utility securities. It cannot be assumed, for it is not true, that the matter is receiving the attention it should from those whom investors have intrusted with the protection of their interests. Bankers, attorneys, engineers and accountants have, as a rule, given it but scant consideration. Many have accepted the utterances of doctrinaires as the last word on the subject. Accounting rules prescribed by commissions, which are based upon the acceptance of false theories, have been regarded as controlling when they are not.

It was not the intention of the writer to cite any opinions, either of courts, commissions, economists or engineers, sustaining the views herein expressed. There is one case, however,, that of the Pocatello (Idaho) Water Company, which so well illustrates the application of sound economics, sound law and sound common sense that he ventures to subjoin an extract from the opinion of Public Utility Commissioner Ramstedt, which was practically sustained by the Court, the opinion of the majority having been overruled; an extract from the opinion of the Court in that case, in which it was finally decided that so-called "accrued depreciation" should not be deducted from the value of the properties of public utilities. It may be assumed, in respect of the first sentence of his opinion, that Commissioner Ramstedt would qualify it in respect of such units as are only displaced because of obsolescence or inadequacy, and which, being composed of stone, concrete, iron and steel, would last as long as the walls of Carcassonne. Stephenson's second locomotive was still in use in 1911 (*Engineering and Contracting*, Oct. 11, 1911). The cast-iron water pipes leading from the River Seine to the fountains at Versailles were installed in 1658. The only repairs that have been necessary after two and a half centuries of service is the occasional replacing of bolts (*Engineering and Contracting*, May 27, 1914). Rome is still supplied with water by an aqueduct the construction of which was begun by Quintus Marcius in 144 B. C. Tunis is now supplied by an aqueduct built by Hadrian in A. D. 120. The aqueduct as Nimes has been in use for nearly twenty centuries. There are many other instances of masonry and concrete structures which have survived many hundreds of years of useful service.

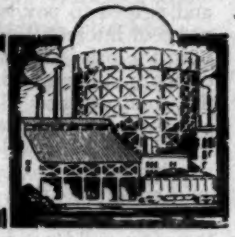
EXTRACT FROM COMMISSIONER RAMSTEDT'S OPINION:

"Physical depreciation, resulting from use, decay and the action of the elements, is a constant factor commencing simultaneously with construction and ending with replacement. A person, having invested his money in a continuous business enterprise for the benefit of others, as in the case of the petitioner herein, and in so doing having subjected his property to the control of the state, from which control it cannot be withdrawn, must always be ready and able to meet the public demand and to replace the constructive portions of his plant from time to time as they wear out and decay. A person having embarked on such an enterprise is justly entitled to compensation to cover this depreciation in addition to a fair return, over and above expenses, upon the reasonable value of the property which he has employed for public use, for the same reason that a laborer using his tools is entitled to wages which will not only compensate him for his services, but enable him to replace his tools as they wear out. Allowance for depreciation cannot, in my judgment, be considered as profit or an earning factor in the business. The expenditure necessary to make replacements at any time may exceed the amount received up to that time to cover the cost of such replacements; on the other hand, the cost of making replacements, at a certain time may be very much less than the amount received up to that time to cover depreciation. The theory of allowance to cover depreciation must be that in the long run the owner will be reimbursed for the money which he must spend in making replacements, which in the very nature of his business he must make from time to time. The fact that the amount he has received from the public at any time is either greater or less than the amount which he has expended for replacements, if the allowance for depreciation is correctly computed, does not affect the returns to which he is justly entitled on his original investment. *He is entitled to a fair return on his investment* and to hold the undepreciated property, or its equivalent in value, which he has employed for public use.

"The fact that in an investigation of the petitioner's property, undertaken at this particular time, for the purpose of fixing rates, it is found that the market value of his physical property employed for public use has depreciated $77,188.39, does not, in my judgment, justify the Commission, in its determination of a fair value for rate purposes, to deduct the amount of depreciation from the present estimated cost of reproducing the property now, and thereby reduce the earning power of his property. The petitioner has undoubtedly in the past twenty years made such replacements from time to time as the public service demanded, and must at all times be prepared to make such replacements as the public service just demands, and *I cannot see how we can justly decrease the earning power of his property by decreasing the investment on which he may earn a fair return.*"



NEWS OF THE GAS INDUSTRY



$100,000 Gas Plant Wanted in Orangeburg, S. C.

The Chamber of Commerce of Oarngeburg, S. C., is now active in taking steps which will provide Orangeburg with a modern and up-to-date gas plant, there having of late been quite a bit of discussion about it. An expert went to Orangeburg recently and went over the situation very carefully. The cost will amount to approximately $100,000 which would include about ten miles of mains. The price for gas to the consumer would be about $3 per 1,000 cu. ft., this being based on about 750 consumers. The idea of the Chamber of Commerce in getting these figures is to interest local capital, to divide the capital stock into small shares and make all consumers stockholders. It is thought that there is enough local capital to start the plan.

Arkon, Ohio, Takes Its First Step Toward Manufactured Gas

Construction work on the artificial gas plant of Akron, Ohio, which is to supply certain parts of the city, is under way, according to L. B. Terry, Akron head of the East Ohio Gas Company. The opening of artificial gas service represents the first step taken in Akron under the existing shortage of natural gas, he said.

The natural gas supply is diminishing at a rate that implies a permanent suspension of the service in three years, Mr. Terry said. The artificial gas plant will begin operations October 1. It is probable that the gas plant will at some time be the nucleus for a plant to supply the entire city. The productive capacity of the plant has not been definitely fixed. The supply will depend on the consumption. Akron's franchise with the East Ohio Gas Company expires early in November. Mr. Terry stated that the matter of renewing the franchise undoubtedly would be taken up with council. The new rates, as compared to the rates now in force has not been announced. It is expected by authorities that the minimum rate will be the same as in Canton, 48 cents.

Natural Gas Supply of West Virginia & Maryland Gas Company Completely Exhausted

Representatives of the West Virginia and Maryland Gas Company, which supplies Cumberland and Allegany County with natural gas for all purposes, at a special meeting of the council stated that natural gas for factories and heating is a thing of the past and that only by the strictest conservation could the company guarantee natural gas supply for domestic use, and that would be limited to the next ten years, when the supply would give out. The company claimed that it even now is taking the gas out of the ground; that all its wells are exhausted and that it has no new wells to tap. A tentative proposition was made to the council under which the gas company, if a franchise could be secured here, would erect a plant for manufacturing and selling artificial gas to Cumberland and the towns in Allegany County. The council, before deciding the matter, will take the advice of legal experts, while the Public Service Commission will undoubtedly be called upon to act in the premises.

Gas Rates Fixed by State Board

An order permanently suspending the old rates for general gas service in the city of Monmouth, Ill., was issued by the State Utilities Commission.

The following rates were put into effect, beginning July 1, 1919.

First 3,000 cu. ft. of gas used per month, $1.60 per 1,000 ft.

Next 4,000 cu. ft. of gas used per month, $1.45 per 1,000 ft.

Next 5,000 cu. ft. of gas used per month $1.25 per 1,000 ft.

All over 10,000 cu. ft. of gas used per month, $1.15 per 1,000 ft.

P. G. & E. Buys Another Distributing System

The Pacific Gas & Electric Company has applied for the furtherance of an application for approval of the purchase of the Durham Light & Power Company. This little distributing system supplies the town of Durham. Cal., five miles below Chico, and it is owned by Foster & Foster. The company proposed to pay $15,000 in cash and 100 shares of first preferred stock of the Pacific Gas & Electric Company for the property. The facts show that Foster & Foster's original investment in 1913 was $5,568; that they had added since a distributing system costing them $17,262, and had about $1,000 worth of supplies on hand. The company's floating indebtedness is $18,000. It has been buying electricity at wholesale rates from the P. G. &E., but the Foster firm desired to retire from the business.

Long Island Company May Use Rebate Funds at 6 Per Cent Interest

The fight which the Second Ward Consumers of the Borough of Queens, L. I., have been waging against the Newtown Gas Company has finally terminated in a decision handed down by the justice of the Supreme Court, in which the latter grants the company permission to use the money which it has been depositing in the bank of Long Island to be held in trust pending a determination of the company's contest of the order requiring it to reduce its rates from $1 to 85 cents. The decision, however, compels the company to pay an interest of 6 per cent in the rebate fund controversy. The fight resulted from the attempt of the Newtown Gas Company to withdraw from the Bank of Long Island certain funds amounting to 15 per cent of the total paid in by the consumers and to substitute the bonds of the gas company in place thereof. The company had intended to withdraw the funds amounting to more

than four hundred thousand dollars and agreed to pay two and one-half per cent interest.

In the briefs submitted by the gas company attorneys, it is alleged that the company needed the funds for necessary improvements and that it would have been well-nigh impossible to obtain the money on the open market for less than seven per cent. It was stated in the brief that the company could not supply gas to the consumer for less than $1.25 per 1,000 cu. ft. In place of the Newtown Gas Company bonds the local attorneys compelled the company to substitute those of the Brooklyn Union Gas Company and other valuable securities and deposit them with the Long Island bank, which has been entrusted with the fund thus far. The order of the court further provided that the Brooklyn Union Gas Company be made a party to the proceedings solely for the purpose of jurisdiction to enforce the bond, in the event of failure to comply with the conditions agreed upon by the Newtown Gas Company.

$1. Per 1,000 for Natural in Topeka, Kan.

Distributing companies of the product of the Kansas Natural Gas Company claim that because the decision by Judge Booth of the Federal Court specifies that leakage losses heretofore stood by the Kansas Natural, must hereafter be stood by the distributing companies, a 25 per cent increase in the present price paid by the consumer will be necessary. "It will be impossible to distribute gas in Topeka for less than $1 a 1,000," says a statement issued by the local distributing company. "The Kansas Natural once estimated that the leakage was 38 per cent. We have been spending $5,000 a month improving the Topeka gas mains and have reduced the loss to 20 per cent."

Northern Central Company Asks 7 Per Cent Increased Rate

William R. Rhoades, the general manager of the Northern Central Gas Company, announced that an increased tariff is necessary to meet a deficit resulting from operating costs and the expense of the installation of a new plant, and to this end the company will file an application with the Public Service Commission asking permission to increase its rates approximately 7 per cent on or about September 1.

President McCarter of Public Service Gas Company Testifies Before New Jersey Commission

A hearing before the New Jersey commission for increased rates for numerous cities in the State was held last week, but the case has been postponed until September. President McCarter of the Public Service Gas Company testified before the commission last week. The company has asked for a twelvemonth emergency rate of $1.15 per 1,000 cu. ft., instead of 97 cents. A question was raised by the commission concerning the depreciation account, and President McCarter stated that the depreciation account was slighted for the purpose of maintaining dividends from 1912 to last year. Mr. McCarter defended the practice on the ground that it was better to pay a fair return on the company's capitalization so that new money could be obtained for the development of the business than to keep the depreciation account up to the figure estimated as necessary by the board when it made its decision in the Passaic gas case nine years ago. The questions on the depreciation allowance were asked by L. Edward Herrmann, counsel for the board. He also brought out the fact that the company, in estimating the amount of revenue it will need from Aug. 1 this year to Aug. 1 next year, had figured the depreciation allowance at 6 cents per 1,000 cu. ft.

Referring to the new oil contract, about which there has been considerable said of late, Mr. McCarter said that it was for one year with the Gulf Refining Company for 5 cents a gallon. He submitted tables showing that in 1904 oil cost 3.69 cents per gallon and in 1911, 1912 and 1913, 3.05 cents per gallon. From 1915 to July 31, 1919, the cost was given at 3.05 cents per gallon. The 1912 gas price was based upon the lowest oil price that the company had had, Mr. McCarter declared.

Other charts presented showed that the average cost of labor per hour in the works on all divisions had increased from 18.54 cents per hour to 45.55, and that the average cost for general labor had risen from 17.83 cents per hour to 39.50 cents.

President Slocum of the commission called attention to the fact that the tax item in the tables showed an increase of more than $1,000,000 since 1912. Vice-President Edmund W. Wakelee of the company explained this by saying that franchise taxes alone had increased from 2 per cent since 1912 and that assessments and tax rates in every municipality had increased. President Slocum commented on this by saying: "I think the public ought to know that increases in taxes are followed by increases in the price of gas."

Commission Authorizes Boston Consolidated to Continue Dividend Standard

The Board of Gas & Electric Light Commissioners of Massachusetts handed down a decision allowing the Boston Consolidated Gas Company to continue in effect the standard price of $1 a 1,000 cu. ft. This action was taken by removing limitations imposed in the order of Oct. 21, 1918, when the standard rate was increased from 90 cents to $1, by which the increased figure was to be effective during only the duration of the war or at most until October 21 of this year. In commenting upon the case the board says: "While the cessation of hostilities has been followed by an improvement in cost of materials, yet this has been to some extent counterbalanced by increases in wages. The probability is that prevailing costs of material and labor will continue for some time to come. Under such circumstances the board deems it a duty to eliminate these limitations and leave the matter to the procedure provided under the statutes—namely, to the petition of the mayor of Boston."

Under the decision, the price of gas to the consumer is not affected, as the standard rate is set for the purpose of regulating dividends paid by the company under the "sliding scale" law.

Resulting New Rate in Atchi-Kan.

In Atchison, Kan., the new gas rate, as a result of Judge Booth's decision, setting a gateway rate, will be $1 a 1,000 cu. ft., according to a statement made to-day by J. W. Waggener, general superintendent of the Atchison Railway, Light & Power Company. The gateway rate to the company will be thirty-five cents a 1,000 cu. ft., the same as the rate made to Kansas City.

"House Heating by Gas" Campaign Gaining Momentum

Plans for the "House Heating by Gas" campaign are being rapidly perfected by the Chicago gas interests. It is expected that before snow flies many homes in the territory adjacent to the southern end of Lake Michigan will be heated by gas. The Peoples Gas & Coke Company have been busy on details of their campaign for several weeks.

Gas Requirements in Gary Greatly Reduced Because of Strike

The gas requirements of the citizens of Gary, Ind., have been keeping only four blast furnaces there in operation, the past week, owing to a strike. Eight of the twelve blast furnaces of the United States Steel Corporation were banked last Sunday and put out of commission as a result of the railroad shopmen's strike in the Chicago territory. Ten thousand men have been thrown out of employment and if the strike is not settled within a week, every Gary steel industry will shut down. This means 20,000 men will be thrown out of employment. Subsidiary plants, such as the coke oven, sheet and tin mills and American Bridge plant, will be compelled to suspend operations unless a settlement is reached. The shutdown has affected Gary, South Chicago and Joliet plants.

Heavy Demand for Fuel Gas in Factories in Northwest Increasing

Continued increased demand for fuel gas in the industries is reported by the Public Service Company of Northern Illinois. The increase is especially noticeable, the company states, in the cases of customers already on the list of heavy gas users.

A number of heavy gas users are increasing their factory capacity. In the Cicero district, as an example of the numerous industrial centers in the territory of the company, several large plants are approximately doubling their facilities. One of these plants will become one of the largest brass manufacturing concerns in the State outside of the Chicago district, and will have eighteen brass furnaces and a considerable number of coke ovens. It has been found that gas is unusually successful in the operation of this kind of machinery.

Northern Illinois Company Active in House Heating Campaign

The Public Service Company of Northern Illinois makes the following announcement regarding its activities in the "House Heating by Gas" campaign which is going strong in the middle Northwest territory:

"Before the arrival of cold weather it is expected a sufficient number of contracts for the heating of private residences with gas, will have been made, to establish this as an additional feature of the company's service. The connections for the purpose being made so far are in half a dozen cities and towns in the territory in which the possibilities of expanding the service are most encouraging.

"In each case a gas burning furnace is to be installed as it is realized high efficiency cannot be secured by use of the ordinary apparatus for burning coal. One of the chief differences between most types of the latter and the improved gas furnace may be designated in non-technical language as the longer and more tortuous route followed by the flame. In the familiar boiler of coal burning plants the flames pass through straight running tubes on their way to the flue. The corresponding pipes in a gas furnace twist and turn and thus provide a longer journey for the heat volume and a much longer contact with the heat. The pipes have a chance to absorb a greater quantity of it. Engineers describe the effect so produced as a reduction in clearance and figure this reduction as amounting to one-fifth of that in coal burning plants. The efficiency of the furnaces being put in may reach approximately 80 per cent. Coal plants rarely show an efficiency equal to half this.

"Leaders in this new expansion movement lay great stress on the necessity of providing all installations with proper appliances. In fact, success largely depends on suitable equipment. This means apparatus special constructed for the purpose and it is urged that consumers must be educated to this fact.

THE ALLENTOWN-BETHLEHEM (Pa.) GAS COMPANY held the annual picnic for its employees at Dorney Park. The picnic was a huge success. All forms of entertainment were in vogue and several hundred people enjoyed the dance program given on the pavilion in the evening.

Gas Torches for Welding Replacing Gasoline Torches

Gas torches replacing gasoline torches for use in welding are becoming popular in many public garages located along the lines of the Public Service Company of Northern Illinois. Extension of this type of appliance is due to its self-advertising qualities among garage owners, according to the company's report, and its efficiency in gaining for it wide usage.

Gas-Fired Furnaces in New Factory of Electric Washing Machine Company

A new concern in the Cicero (Ill.) district that will be a large consumer of gas is an electric washing machine manufacturing company, which has erected a new factory. Gas will be used in diversified ways in the operation of this factory, among them in heating a type of continuous drying oven 80 ft. long, 8 ft. wide and 7 ft. high in which the washing machines are dried after painting. The gas consumed by the oven is the equivalent in energy of an electric supply of 100 h. p. The same concern is considering the making of other appliances which will necessitate the installation of gas melting furnaces and soldering furnaces, and the institution of several processes depending upon fuel gas.

Oklahoma Building 50 Mile Pipe Line—35 Miles 16-Inch

Construction work in fifty miles of gas pipeline from the Cement field to the Walters field and Keys holdings in Southwestern Oklahoma has been begun, it was announced by officials of the Oklahoma Natural Gas Company.

The new pipeline will contain 35 miles of 16-inch pipe and 15 miles of 12-inch. It will connect up with the 12-inch line now running from Oklahoma City to Cement, and extend that line into the newer gas fields near Walters, Okla. The Oklahoma Natural has four ditching machines working now and a large crew of men and teams. Two miles of ditch have already been constructed. The work is being done under contract and is expected to be completed long before cold weather. The company believes the new field will give Oklahoma City all the gas it can use this winter.

U. S. Court Rules Company Is Entitled to Benefits of the Federal Bankruptcy Law

The United States Circuit Court of Appeals at Cincinnati has affirmed the judgment of United States District Judge Sessions of Grand Rapids, Mich., in the case of the city of Holland, Mich., against the Holland City Gas Company. In effect this decision means that the gas company is entitled to benefits of the Federal bankruptcy law.

About a year ago the Holland City Gas Company made an application in bankruptcy, declaring its receipts were not sufficient to enable it to live. The Grand Rapids Trust Company was appointed receiver for the company and has continued in that capacity. In the meantime, the gas rate for Holland was raised from 90 cents per 1,000 to $1.25.

The city contended that the Holland City Gas Company could not take advantage of the bankruptcy law, because the act did not apply to public utility corporations and that such corporations must perform their franchise contracts. This contention, however, was found faulty.

Applied broadly, the decision means that public utility corporations anywhere who find themselves losers by franchises in which definite rates for gas or electricity are fixed, can plead bankruptcy, go into the hands of receivers, and thus force a revision of the terms of the franchises.

$1.50 Gas for Newburgh and Poughkeepsie

The Public Service Commission, Second District of New York, dismissed complaints by users of gas in Poughkeepsie and Newburgh, against the Central Hudson Gas & Electric Company and fixed "the just, proper and reasonable rates" for gas furnished in Poughkeepsie and Newburgh and their suburbs, effective until July 1, 1920, and thereafter until otherwise ordered by the commission, at $1.50 per 1,000 cu. ft. per month. The gas company made changes in its rates for gas, increasing the rate for ordinary consumers from $1.25 to $1.50 per 1,000 cu. ft. It is this rate which complainants attacked. The Newburgh complaints were signed by over 1,000 individuals of whom only one appeared at the hearing. The Poughkeepsie complaint was vigorously contested.

Henry L. Doherty Proposes Varying Rate to Commission

Gas rates which would vary from 50 cents to 90 cents a 1,000 were proposed by Henry L. Doherty, gas magnate, who controls the Kansas Natural and several distributing companies, before the Public Utilities Commission. The rates would result from a plan suggested by Mr. Doherty of a sliding scale of rates based on the capacity of the burners and the amount of gas used. Thus a "fifty foot contract" would be based on burners which would use fifty cu. ft. of gas in an hour. For the first 1,000 ft. used the charge would be $2.13. When 2,000 ft. is used in a month the charge would be $1.22 a 1,000. With 3,000 ft. which is the usual amount by a small household using gas only for cooking, the rate would be 91 cents. With more gas used, the rate would decrease down to 50 cents a 1,000 if 9,000 feet were used. With "fifty foot" facilities, gas burners would be in use one-fourth of the time to burn 9,000 ft. The plan carries a provision that if the burners are in use one-half the time, the rate would go down to 40 cents a 1,000.

The plan proposed by Mr. Doherty is for the purpose of guaranteeing a steady consumption of gas both in summer and winter. In summer, the rate would be higher, in winter, with greater demand, the price would be lower. However, the receipts of the gas company would not fluctuate as they do on the present fixed charge.

The plan also carries provision for the gradual introduction of manufactured gas as the natural gas supply gives out. This gas would be produced in central plants located in coal fields, and at places where the by-products of manufactured gas plants could be readily sold.

Higher Rate Schedule Allowed in Ocean City, N. J.

Increased schedule of rates which will include a monthly service charge of from 25 cents for three and five light meters to $2.20 for twenty light meters, has been allowed the City Gas Light Company of Ocean City, N. J., by the State Board of Public Utility Commissioners. The company made application for the increased rates on the ground that the present rates do not yield sufficient revenue for the company. The petition showed that it had not earned bond interest in two years, nor interest on other obligations.

Estimated Cost of Manufactured Gas Plant for Alliance, Ohio

Engineer W. W. Shidler, in accordance with a request, presented the city council of Alliance, Ohio, estimates of what it will cost to install manufactured gas plant to supply the city after the natural gas service is discontinued. The following are the figures made in the report: Estimated cost of installing a distribution system, $650,000; rental of the Alliance Gas & Power Company's present distribution system, $58,000; cost to purchase the latter system, $525,000; cost of a gas plant site, $20,000.

The estimated cost of a coal gas producer, one and a half million cu. ft. capacity as built by the New Process Gas Company's system, $150,000. A mile of 16-inch connecting mains at $25,000; site, $20,000, and incidentals, $25,000, making a total estimated cost of $220,000.

For a carbureted water gas plant as built by the Improved Equipment Company, of New York, $469,000; site, $20,000; building, $51,000; total cost, $540,000.

A carbureted water gas plant, 1,200,000 cu. ft. capacity, is estimated as follows: Plant, $350,000; building, $50,000; site, $20,000; making a total cost of $420,000.

Beverly Gas Company's Annual Report Makes Good Showing

The annual meeting of the stockholders of the Beverly (Mass.) Gas & Electric Company was held at the office of the company with President Andrew W. Rogers presiding. The following directors were re-elected: Andrew W. Rogers, Herbert F. Winslow, Charles R. Prichard, Sidney W. Winslow, Jr., and Chauncey W. Waldron. Charles R. Prichard was elected as clerk and treasurer. The reports showed that the company has done a good business during the year although the daylight saving regulations had cut down the receipts for lighting and that the high cost of coal and all the supplies entering into the business has been responsible for a large increase in the costs of operation and in a reduced net revenue.

THE AMARILLO OIL COMPANY'S Masterson No. 3 well was drilled in and is now making approximately 20,000,000 ft. of gas, with a showing of oil. This well is located twenty-eight miles north of Amarillo, Texas.

Decision in the Worcester Gas Strike Case

The State Board of Conciliation and Arbitration has given a decision in the case of the Worcester Gas Light Company and its striking employees. The decision makes no change in the pay of the general foreman; gives the department foreman $36 per week and submits a list of wages for over a score of different classes of employees, ranging from a minimum of 44 cents an hour for lamp trimmers and 46 cents for laborers and watchmen to a maximum of 63 cents an hour for the chief repairer of the crane department and 42 cents for the foreman of the street department.

The board further decrees that eight hours shall constitute a day's work; that 48 hours shall constitute a week's work, that all work in excess of 48 hours shall be paid for at the rate of time and one-half, and that work done on legal holidays shall be paid for at double time. The following provision is a part of the agreement to be observed by the company and its employees: "There shall be no strike or lockout. Any dispute relating to wages, hours of labor and working conditions not adjusted by conference of the parties shall be referred to arbitration, to be determined by the State board."

By agreement of the parties, the decision is to take effect on the date of returning to work.

By-Product Coke Contract Approval Dismissed

The State Public Utilities Commission dismissed the application of the Peoples Gas Light & Coke Company for approval of a ten years' contract with the By-Products Coke Corporation of Chicago. The contract provided that after Jan. 1, 1920, the gas company should pay 10 cents a 1,000 cu. ft. for coal gas manufactured by the coke corporation. This price was an increase of 100 per cent over the present price paid by the gas company. It is purchased now from the By-Products concern at 5 cents a 1,000 cu. ft. and resold to Chicago users at 87 cents a 1,000.

Increase for Pana

Under a ruling by the Illinois Public Utilities Commission, the general rates for Pana for gas furnished by the Central Illinois Public Service Company are to be increased 20 per cent and remain effective until December 31, 1919.

New Patents for Acetylene Gas Aid in Development of Shipbuilding

The patents of an Oakland, Cal., inventor for making acetylene gas, worked out and produced in an Oakland factory, have proved of great value in the development of shipbuilding, and the little plant, of which Henry P. Squire is the manager, has been kept busy for several years supplying various implements using acetylene gas in cutting and welding and working steel plates in the shipyards. It was some years ago that Jack Travers worked out patents for making and handling acetylene gas. Up to that time this gas had been manufactured by allowing water to drip upon carbide. Travers reversed this by feeding the carbide into the water, and in this way the flow of the gas could be controlled, preventing explosions.

Since that time the Travers patents have passed into the hands of Henry P. Squire, and they have been improved upon, and new applications found for the original principle. When shipbuilding became a Pacific coast industry of importance use was found for the acetylene generators made under these patents, for blast torches and for cutting and welding torches.

The Pacific Coast Shipbuilding Company at Bay Point placed an order with Mr. Squire recently for a second 300-pound gas generator. They now have this gas piped to all parts of their yard. Blast torches and cutting and welding torches are being turned out in great numbers, probably 200 of these implements being in use in the various shipyards in Oakland and San Francisco. Many have been exported to foreign countries.

Charlestown Rate Continued Because of Coal Prices

The decision of the Massachusetts Gas Commission relative to the price charged for gas by the Charlestown Gas & Electric Company has been modified to the extent of allowing the present price of $1.10 approved by the commission as a war measure to remain in force until Oct. 20, when it will be reduced to $1.05. The board's original decision reducing the price as of June 20 was made in anticipation of a decrease in coal prices. Wages, coal and materials continue at their high levels and make the war-price of gas essential, the company claims.

Companies Appeal for Removal of Personal Assessments

The Camden County (N. J.) Board of Taxation heard the appeals of the Public Service Railway, Gas & Electric Companies for the removal of the personal tax assessments levied by the assessors in all parts of the county for this year. The attorneys for the Public Service contend that under the new gross income tax all such assessments are eliminated. The appeals affected every part of the county, but no city or town except Camden filed a protest. Camden, through City Solicitor Bleakley, objected to the removal of the entire assessment on the ground that much of the machinery is cemented to the power houses and other buildings and therefore is real esate. There is no machinery of this kind in any of the other districts except Gloucester City, but Gloucester decided not to protest this year, but to fight it out next year. The county board decided to reserve its decision in order to go over the act more fully.

East Youngstown Gets Its First Contract

At a meeting of the East Youngstown, Ohio village council the mayor and clerk were instructed to enter into a contract with the East Ohio Gas Company for five years, at a rate ranging from 48 to 63 cents, the resolution passing as an emergency measure, and will become effective just as soon as is permitted by law. Some time ago there was talk of East Youngstown being shut off from the natural gas supply. The village solicitor, J. H. C. Lyons, conferred with the East Ohio Gas Company and secured a franchise, under the terms mentioned. It is the first contract that the village has ever had with the gas company, the rate prevalent in Youngstown—38 cents per 1,000 ft.—being paid by gas customers. The new rate is fixed in a manner to encourage users to conserve the supply, the biggest consumers paying the highest rate.

Smethport, N. Y., Raises Rate

The Smethport (N. Y.) Gas Company has given notice that on August 25 a charge of 37 cents per 1,000 cu. ft. will be made for gas for domestic uses. This is an advance of five cents per 1,000 ft. The company formerly furnished gas free for street lights now a charge of from $8 to $20 a year, according to size, will be made for each light.

Allentown - Bethlehem Company Will Charge for Meter Service

The Allentown-Bethlehem (Pa.) Gas Company announces a meter service taking effect September 1. A charge of 25 cents per meter per month will be made on all 3 lt. or 5 lt. meters; 50 cents on 5 A, 10 lt., 20 lt., or 30 lt., meters; 75 cents on 45 lt., 10 A, 60 lt., or 80 lt. meters, and $1 a month on 100 lt. capacity meters. The minimum monthly charge of 30 cents will be discontinued after September 1. The company announces that the present rate schedule will not be disturbed at this time, stating that the service charge was only decided on as a last resort to partly offset the effect increased cost has had upon its earnings. The company gives as its reason for the increase the advanced cost of production particularly coal, oil and labor. The cost of fuel in 1918 increased $70,000 while oil increased $90,000. Labor increased 50 to 90 per cent.

Company Pays Employee $10,000 Compensation for Loss of Eyesight

A compensation award of $10,000 to Salvatore Sallati by the Bridgeport Gas Light Company, was made and approved to-day by Compensation Commissioner Edward T. Buckingham, for the loss of sight of both eyes to Salati. It was agreed by those in the case that the average weekly wage of Sallati was $28.

While working for the company on January 30, a pick wielded by the injured man struck a piece of dynamite, causing it to explode which resulted in the loss of the sight of both the man's eyes. The company furnished all medical and hospital treatment and paid for the same, but with no avail.

Under the compensation act for the loss of both eyes the claimant is entitled to compensation for a period of ten years at the maximum amount of compensation, $14 weekly, this amounting to $7,280. The claimant in this case was only 22 years old and has a wife and child in Italy.

Two propositions were offered by the gas company, $20 a week for the rest of his life and payment of his expenses to Italy, together with a companion, or the lump sum of $9,500 and $500 for the expenses of himself and a companion who will take him there and return to the United States. Sallati preferred to take the money in a lump sum and buy a farm which he will work for a living. It was agreed that the company should pay him the total amount, $10,000.

This is one of the finest examples of generosity of a company to their injured employee. It speaks well of the company, which took so much interest in their employees. The company paid Sallati $2,720 more than the compensation commissioner could order it to pay.

$1.30 Rate Sustained in La Crosse

Methods of Company in Reporting Financial Conditions Criticised by Commission

There is no prospect of citizens of La Crosse, Wis., paying less than $1.30 per 1,000 cu. ft. for gas unless the railroad commission of Wisconsin reverses its decision or the Circuit Court of Dane County finds the rate prescribed is unreasonable, is the interpretation placed upon the finding. The order of the commission, as explained by City Attorney Oscar J. Swennes, means that gas patrons of the Wisconsin-Minnesota Light & Power Company in this city will continue to pay $1.30 unless, in the meantime, a subsequent order is filed sustaining the so-called emergency rate of $1.30 and establishing it as the charge for an indefinite period. The ruling of the railroad rate commission sends the La Crosse gas case back to the Circuit Court for review. In its decision the railroad commission sharply criticises the Wisconsin Minnesota Light & Power Company for failing to file correct reports as to its coke-handling charges. "Most reprehensible" is the way the railroad commission characterizes the methods employed by the utility in arriving at some of the conclusions respecting its finances.

Increase Denied Company in Carlinville

The application of the Madison County Light & Power Company for advanced rates for gas service in Carlinville, Ill., was denied by the Public Utilities Commission. The commission further ordered that the effective period of the schedules of rates now in effect for gas service in Carlinville, is extended from July 1, 1919, to December 31, 1919.

Distributing Companies Will Appeal Kansas Company's 35-Cent Gate Rate

Modification of the gateway gas rates set by Federal Judge Booth was asked at a meeting of the officials of forty-seven distributing companies in Kansas City. The officials unanimously agreed that unless the rates are lowered at the gateway, they will be forced into bankruptcy and to suspend business, providing no increase in their charges is granted.

The application of the forty-seven companies that distribute the product of the Kansas Natural Gas Company setting forth reasons why they wish to have Judge Wilbur F. Booth's approval of the schedule of rates presented by the receiver for the Kansas Natural set aside, was completed at a conference of representatives of the distributing companies and dispatched by messenger to Topeka. It will be filed in the first division of the United States district court for Kansas.

The distributing companies assert the schedule as approved, will force a 35-cent gate price for gas in Kansas City and the application sets forth reasons why Judge Booth of the Federal Court at Minneapolis is asked to modify his approval of the receiver's schedule. "We believe Judge Booth will hear our application but if he denies us relief we will be entitled to have the matter reviewed by a higher court," was the statement of J. W. Dana, attorney for the Kansas City Gas Company.

"If we do not obtain a reduction to the 22-26 cent rate that we ask and our city rate of 70 cents is unchanged, we will be compelled to suspend business as we would be driven into bankruptcy within three months. If the gateway rate we ask for is not granted, we will apply for permission to increase the city rates to 90 cents.

City Asks Court for Right to Name Rate

The right to regulate the rate of gas sold within the city is asked by the city of Pueblo, Colo., in a brief filed in the Supreme Court of Colorado by City Attorney Charles M. Rose. The brief asks that the Pueblo Gas & Fuel Company be prevented from collecting the rates placed in operation by the ruling of the State Utilities Commission. Filing of the brief was the outgrowth of the recent Supreme Court ruling that home rule cities have the right to regulate public utility rates.

Boston Consolidated's Standard Rate to Remain Unchanged

The Gas & Electric Light Commission has ruled that the standard price of gas as fixed by the Boston Consolidated Gas Company shall remain unchanged. In its decision the commission says:

"While the cessation of hostilities has been followed by an improvement in cost of materials, yet this has been to some extent counterbalanced by increases in wages. The probability is that prevailing costs of material and labor will continue for some time to come. Under such circumstances the board deems it a duty to eliminate these limitations and leave the matter to the procedure provided under the statutes, namely, to the petition of the Mayor of Boston.

$400 Damage Caused by Fire in Los Angeles

Spontaneous combustion caused a blaze at the establishment of the Los Angeles Gas & Electric Corporation, 639 South Hill Street, Los Angeles, Cal. The structure, which was occupied by the gas fitters' department, was damaged to the extent of $300. Damage amounting to $100 was done to the stock.

Pittsfield Company's Annual Report

The Pittsfield (Mass.) Gas Company recently held its annual meeting and the following officers were re-elected: President, William L. Adams; treasurer, H. A. Dunbar; manager, H. C. Crafts; directors, W. L. Adams, George H. Tucker, W. G. Backus, Thomas F. Plunkett, Norman C. Hull, I. D. Ferrey and Arthur H. Rice. The usual semi-annual dividend of 3 per cent was declared.

The total income from sales of gas was $334,237. The increase in meters during the year was 134, making a total of 10,968, of which 8,795 are of the prepayment type and 2,173 of the regular type. There are 772 customers on the extension made three years ago to Lee. During the year the company piped for 772 lighting outlets and increased the number of gas ranges on the lines by 215 and the number of water heaters by 98 and made 181 house connections.

On account of the high price of pipe and labor only a small amount of street mains was laid during the year, the present total being 115 miles, located in Pittsfield, Dalton, Lenox and Lee.

The largest sendout in any one day was on July 11, 1918, when 1,069,000 cu. ft. were sent out from the works. The amount of gas sold was 259,238,000 cu. ft. in the manufacture of which 11,000 tons of coal, 4,000 tons of coke and 800,000 gallons of oil were used.

Application for 40-Cent Increase by Republic Gas Company

The Republic Gas Company, which supplies Akron, N. Y., with natural gas, has applied to the New York Public Service Commission of the Second District for permission to advance the price of gas to 75 cents a 1,000 cu. ft. according to the following statement:

"The Republic Company also supplies natural gas in Batavia, Akron, Alexander, Attica, Corfu and Wyoming and the towns of Alden, Clarence, Elma, Lancaster, Marilla and Newstead in Erie County; Alexander and Batavia, Bethany, Darien, Pavilion, Pembroke and Stafford in Genesee County and Wyoming, Covington and Middlebury in Wyoming County.

The company recently acquired franchises of the Alden-Batavia Natural Gas Company, the Akron Natural Gas Company and the Attica Natural Gas Company and operates under franchises except in Darien, Elma and Stafford, where the company is not in possession of franchises although the petition states the impression prevails that franchises are in existence. The present rate for natural gas in these municipalities is 35 cents net, per 1,000 cu. ft. except in Alden township, where it is 25 cents, and in Attica, 50 cents. It asks permission to charge 75 cents a 1,000 cu. ft. in these places.

Healdsburg, Cal., Taking Steps to Secure Gas Plant

The committee appointed by the Chamber of Commerce one month ago to investigate the matter of a gas plant for Healdsburg, Cal., as working at its task from every angle and soon expects to have some interesting information for the people. The need for a gas plant has been realized for some time, and now that the war is over active steps will be taken to secure this needed improvement.

Re-establishment of Manufactured Gas Service Ordered by Commission

An order was entered by the Illinois Public Utilities Commission requiring the St. Clair County Gas & Electric Company to discontinue on or before August 1, 1919, the natural gas service from the Staunton field to the cities of Edwardsville, Collinsville, Caseyville and Le Claire and re-establish manufactured gas service in the said cities, adjusting, without cost to the consumers, the various appliances to burn said artificial gas. The rates fixed are:

5,000 cu. ft.	$1.25 per 1,000
10,000 cu. ft.	1.00 per 1,000
20,000 cu. ft.	.90 per 1,000
60,000 cu. ft.	.75 per 1,000

Discount of 10 per cent if bill is paid by 10th of month.

$1.25 Rate in Buffalo Effective Sept. 1

At a conference between Chairman Charles B. Hill, representing the New York Public Service Commission, Daniel J. Kenefick, representing the Buffalo Gas Company, and Herbert Hickman of the corporation counsel's staff for the city of Buffalo, it was decided to put into effect the new rate for manufactured gas, fixed by the public service body at $1.25 net, on Sept. 1. It is still undertermined as to what will be the minimum for a month's usage. The gas company wanted the minimum charge placed at 75 cents with ten per cent off for payment before the 10th of the month, while the city is holding out for 75 cents with a discount of 20 per cent.

New Employees Association Formed to Promote Good Fellowship

Articles of incorporation were filed with the Secretary of State by the Langsdale Employees Association of the Langsdale plant of the Citizens Gas Company, of Indianapolis, Ind. The association will be self-governing and was formed for the purpose of promoting good fellowship and assisting in bettering conditions at the plant. Twelve directors selected from various branches of the plant will administer the business affairs of the association. A commissary will be operated by the association and athletics, games and entertainments arranged for.

Serious Gas Shortage in Orbelin, Ohio

The gas situation in Oberlin, Ohio, is serious. At present the Pittsfield wells, near by, furnish an inadequate supply and the Pittfield Gas Company has done nothing to renew its contract with the Berea Pipe Line Company, previously held by the Oberlin Gas & Electric Company because of unsatisfactory conditions. There will be a critical gas shortage with the opening of Oberlin University in September unless the present situation is remedied. The council recently revoked the order inincreasing the rate to fifty cents and reverted the price to the old rate of 30 cents per 1,000 cu. ft.

New Development of Natural in Eastland Field

The Ardizzone-Braden Oil Company has 7,000,000 ft. of gas a day in the company's well a mile and a half north of Eastland, Texas, at a depth of 1,740 ft. This is an unusual development in that section of the field and seems to indicate that the shallow sand this is producing to the eastward of this well at about that depth may be found there.

Pacific Company's Earnings

Net income of Pacific Gas & Electric Company for the year ended April 30, 1919, amounted to $3,620,770, according to the report of the company, which was submitted to the New York Stock Exchange. Stock in the company was traded in on the New York Exchange for the first time just recently. Gross revenue of the company was $24,055,226, while expenses, taxes, reserves, etc., amounted to $15,618,229, leaving a net income from operation of $8,436,996.

The surplus of the company was $3,337.861, making a total surplus of $6,958,571. Dividends amounting to $1,922,465 were paid, making a profit and loss surplus at the end of the year of $4,838,239.

THE CONSOLIDATED GAS COMPANY (N. Y.) convertible 6 per cent bonds, outstanding in amount of $25,000,000, will fall due February 1, 1920. The conversion privilege provides that conversions may be made on any interest date prior to February 1, 1920. Accordingly only two dates remain on which conversions may be made, namely, August 1, and November 1.

River Bend Company Allowed Increase

The River Bend Gas & Water Company, supplying gas to consumers in Dinuba, Kingsburg, Reedley and Parlier, Cal., has been granted authority by the railroad commission for an increase of rates ranging from 6.7 to 14 per cent. according to quantity of gas used.

The increase was allowed on a showing the company was operating at a loss.

Northern Indiana Issues $1,906,000 Ten-Year 7 Per Cent Notes

The Northern Indiana Gas & Electric Company has been authorized by the Public Service Commission to issue $1,906,000 of ten years seven per cent notes to refund present six per cent demand notes of the United Gas Improvement Company in the sum of $955,300 and cash loan bearing eight and one-half per cent interest made by the same company.

The Northern Indiana Company owns and operates gas plants at Logansport, Wabash, Lebanon, Michigan City, Hammond, and other cities. It has electric plants at Michigan City, Hammond, East Chicago, Indiana Harbor and smaller points in Lake County.

$30,000 Fire — Destroyed Company's Coal Sheds

Sparks from the smoke stack of the steam freighter *Senator*, which ran aground in the north branch of the Chicago River, are believed to have started the fire which destroyed the coal sheds of the Peoples Gas, Light & Coke Company, at Hawthorne Avenue and Hobbie Street, Chicago.

The steam tug *Racine* was aiding the freighter to get off and both boats were throwing sparks. The fire started on the roof of the coal shed and, fanned by the wind, soon spread to other buildings in the vicinity. The fires were quickly extinguished. Damage was estimated by J. H. Eustace, chief engineer for the gas company, at $30,000.

Higher Schedule Granted Central Hudson Company

The New York Public Service Commission, second district, has dismissed complaints by users of gas in Poughkeepsie and Newburgh against the Central Hudson Gas & Electric Company and fixed the rates for gas furnished in Poughkeepsie and Newburgh and their suburbs, effective July 1, 1920, and thereafter until otherwise ordered by the commission, at $1.50 a 1,000 cu. ft. per month, with a prompt payment discount on monthly consumption of 1,000 cu. ft. or over.

Personal Notes

W. G. Maxcy Sells Oshkosh Plant

W. G. Maxcy, of Oshkosh, Wis., has closed a deal for the sale of the City Gas Company's plant and extensions to C. O. Somdahl of Fort Wayne, Ind. Mr. Somdahl has already taken possession and plans important improvements. After closing this deal Mr. Maxcy still owns two water plants and one gas plant. At one time he controlled fourteen utilities, including the Antigo water works, now municipally owned.

M. W. BOGUE has resigned his position as manager of the Saranac Lake (N. Y.) Gas Company, after holding the position several years. He will be succeeded by Bert Cordwell, of Ogdensburg, who made arrangements to accept the position at a conference with John Crowley and P. H. Hallahan, the new proprietors of the business.

BERT CORDWELL, who succeeds M. W. Bogue as manager of the Saranac Lake Gas Company, has been connected with the large plant of the Ogdensburg Gas Company for a number of years, his father being superintendent there. He goes to Saranac Lake with much valuable knowledge of the business and will undoubtedly be successful.

CHARLES BROWN, who has been in the service of the United States Government in the Gas Division of the Osage Indian Agency at Pawhuska, Okla., has been selected for one of the chief executive officers of the Kay County Gas Company and will act in the capacity of President Marland's assistant.

THOMAS F. GANNON, just returned from eighteen months' service at the front in France has been assigned to the management of the new personal service department of the Dover (N. J.) Gas Company.

JOHN GOULD, salesman for the Dover (N. J.) Gas Company, has thought out some very interesting plans to aid the company in closer co-operation with the city's Chamber of Commerce.

GEORGE B. BIDDLE, of Wheeling, superintendent of the Natural Gas Company of West Virginia, was elected president of the West Virginia Natural Gas Association held recently. Mr. Biddle has been in the gas business for twenty-five years and has held his present post for fifteen years.

JOSEPH NESTOR, of the Manufacturers Light & Heat Company, of Wheeling, W. Va., was re-elected a director of the West Virginia Natural Gas Association.

WILLIAM P. VERY and A. F. GARDELLA of the Salem Electric Light Company and Suburban Gas & Electric Company, of Revere, Mass., were chairman in charge of the joint outing of the company's employees at Lynfield, Mass. There was a fine lobster and chicken dinner; a baseball game; dancing and a pleasant time was had by all.

S. E. MATTHEWS, formerly supervisor of the Eastern Shore Gas & Electric Company has been made general superintendent of the Staunton Light Company, of Staunton, Va.

W. T. RUSSELL, meter inspector of the Maryland Public Service Commission, was sent to Cumberland, Md., recently to confer with Mayor Thomas W. Koon and members of the City Council regarding the gas situation.

WILLARD KIDNEY, of Weedsport, N. Y., has been appointed to take charge of the Lyons, N. Y., office of the Empire Gas & Electric Company. He will also have Clyde territory. William J. Callanan, who has had the Palmyra, Newark, Lyons and Clyde offices during the war, will continue as superintendent of Newark and Palmyra. Mr. Kidney has had long experience in the gas and electric business and has been in charge of several offices in that section.

THE OKLAHOMA GAS & ELECTRIC COMPANY held their annual picnic at Belle Isle, Okla. The entertainment committee leased Belle Isle for the day. Dancing, boating, a barbecue, speeches and enjoyment of the various novelties at the park were among the attractions planned for the day. All acclaimed it a great success.

Construction Notes

New Gas Main One Mile in Length

The Newton (N. Y.) Gas & Electric Company will lay a high pressure gas main from its plant for a distance of 4,700 feet, but a little less than one mile. This will be done at an approximated cost of $5,000. The work has already been commenced with a force of thirty men, under the foremanship of Atwood McMickle. It is expected the main will be completed a long time before the advent of frost. The improvement will be made without disturbing the concrete pavement on the streets. Henceforth the supply of gas is to be controlled by automatic governors, practically doing away with the low pressure, so particularly noticeable between the hours of 10.30 a. m. and 1 p. m., which the consumers have complained of for some time.

Gallatin Valley Gas Company Building Plant in Montana

R. S. Redman, representing a gas construction company of Newton, Iowa, has secured an option on a site for the erection of a gas plant at Bozeman, Mont., and has tested the soil conditions. He came here at the request of S. T. Meservey of Chicago, promoter and head of the Gallatin Valley Gas Company, which company has been negotiating for a plant for many months. During the war period no effort was made to carry out the plans, but recently negotiations were renewed with the city and an extension of the franchise secured. Work will begin before August 21 and carried on to completion before the expiration of the time limit.

Kay County Gas Company Building 30-Mile Pipe Line

The construction of a 30-mile natural gas pipe line from the Western Osage territory to Ponca City, Okla., at a cost of approximately $300,000, was made certain through the action af the Ponca Chamber of Commerce and city council in approving a raise in local rates for domestic gas from 25 to 40 cents net per 1,000 cu. ft. The Kay County Gas Company, one of the chief distributing concerns in Oklahoma, has set aside $300,000 for this pipe line and work is to start immediately. The main pipe line will be built to Ponca City, which becomes the chief distributing point for the gas from the Western Osage. The action of the local Chamber of Commerce and the city council was taken in order to make certain that Oklahoma cities instead of Kansas and Missouri cities, will obtain this extensive permanent supply of gas. The action, therefore, was beneficial to many other towns and cities of Oklahoma.

The Kay County Gas Company, of which E. W. Marland is the head, now holds over 350,000 acres under lease in the Western Osage, and the first well, a 10,000,000-ft. gasser, has been completed. It was this well that made certain the gas supply and demanded the building of the eight-inch pipe line to Ponca City. The company is planning the expenditure of $1.000.000 on the Osage leases this year.

Oneida Company of Rhinelander, Wis., May Build Plant in Marshfield

The Chamber of Commerce of Marshfield, Wis., in co-operation with the city officials, has been engaged for several months in making a thorough investigation regarding the practicability of inducing a gas company to erect a plant in this city. In taking this action they complied with the wishes of the people, expressed at a general election, when a large majority of the electors went on record in favor of such utility. The sentiment of the people of Marshfield has been sounded by a committee and it was found 95 per cent of the housekeepers of Marshfield are looking to the Chamber of Commerce and the City of Marshfield to secure the establishment of a gas plant. The investigation was started by bringing to the city, W. E. Vaughn, general manager of the Oneida Gas Company, of Rhinelander, Wis., who outlined at a public meeting of citizens, the history of the establishment of the gas plant at Rhinelander and the success attending its operation. Mr. Vaughn is recognized as an expert in his line of work. In addressing the public meeting he expressed the opinion that the Oneida Company might be induced to erect a plant in Marshfield.

Lone Star's $5,000,000 Pipe Line

Announcement was made by the Lone Star Gas Company that work has started on the $5,000,000 pipe line which is to convey gas from the West Texas fields and that this line would be completed and ready for operation during December of this year or January of the coming year. The line will extend from the West Texas gas fields to a point near Handley, between Dallas and Fort Worth, and will serve the following towns: Granbury, Cleburne, Waxahachie, Italy, Corsicana, Milford, Itasca and Hillsboro.

The capital stock of the company has recently been increased by $4,000,000, making the Lone Star's capital now $10,000,000.

The Lone Star Company will begin an extensive drilling campaign for oil. The company has under lease some 50,000 acres in the Ranger and Eastland fields of West Texas and about 30,000 acres of oil land in Oklahoma.

North Adams Company Erects More Street Lights

Street lights have been erected on a back road from North Adams to Williamstown, Mass., as far as the North Adams line. The work was done by the employees of the North Adams Gas Light Company, and residents of the section have expressed extreme satisfaction and pleasure.

New York and Queens Company to Extend Mains

After a fight lasting more than two years, the New York & Queens Gas Company has finally capitulated, and at a meeting of the board of directors an order was passed authorizing the immediate construction of the extension of gas mains from Bayside to Douglaston. Maynard H. Spear, general manager of the Flushing office of the company, stated that the work would be started at once. He declared that the cost of pipe is now 100 per cent higher than when the controversy over the extension of the mains to Douglaston started. The action of the board of directors in deciding to go ahead with the work without delay is the end of a long fight to get gas in Douglaston. The company was reluctant to abide by an order of the Public Service Commission to install gas in Douglaston, claiming that it would result in a financial loss.

New Holder and Other Construction Work Planned by Williamsport Company

The Northern Central Gas Company, of Williamsport, Pa., is arranging to greatly increase the capacity of its plant and better the service by increased distribution. To accomplish this it is found necessary to erect in the western part of Williamsport a holder with a capacity of from 750,000 to 1,000,000 cu. ft. which, with other new equipment that will have to be installed, will cost approximately $200,000. This improvement will require constructing a new six-inch high pressure line from the present works to the new holder, and duplicate compressors with a capacity of 100,000 cu. ft. per hour. It also will require a rebuilding of the entire purification department, with a capacity of 100,000 to 120,000 cu. ft. per hour, and the installation of duplicate works meter and other works' apparatus of larger capacity, all of which will figure up an expenditure of about $200,000. The generating capacity of one of its plants located north of the Pennsylvania railroad, is large enough, it is said, to take care of the business for the next five years, but the holder capacity has to be increased for the delivery of the amount of gas now being required by the city.

The improvement contemplated will equalize the pressure and increase the flow of gas through the mains, so that the present low pressure at the hours of the heaviest pull —around noon and at 6 p. m.—will be the same as at all hours in the day.

There is plenty of capacity now for the generation of gas, but the trouble has been to get enough pressure to distribute the product properly throughout the city. This new holder and equipment are expected to solve the problem that has been confronting the officials of the company for some time, and will relieve the situation for several years to come.

Complete Furnace Recuperator Installed at Three Rivers

The Michigan Gas & Electric Company of Three Rivers is having installed a complete furnace recuperator and retorts which will give the company a total of twelve retorts available for the manufacture of the city's gas supply instead of having to depend entirely upon six as at present.

Southern Counties Extends Gas Mains to Fillmore

The Southern Counties Gas Company has let the contract for material for the extension of the gas mains from Santa Paula to Fillmore, Cal. As soon as the line is completed, which will be within the next few months, an office will be opened in Fillmore and that city will be supplied with natural gas.

$12,000 Water Gas Set Installed at Springfield, Mass.

Installation of a water gas set for use of the Municipal Light Department of Springfield, Mass., to augment the supply secured from coal is about completed and the new set will be put into commission at once. It is not the plan of the department to use the set extensively at first, due to the fact that it is cheaper at this period to manufacture gas by the present method, instead of making water gas. This is because the oil used in the latter process is much more expensive than coal.

Appropriation for the water gas set was made by the voters of the city of Springfield. The set itself represents an outlay of $12,000 and in addition there were construction expenses and incidentals which caused an outlay of about $8,000 additional. The old plant of the electric light station was taken over in part for housing the water gas set now that its days of usefulness are ended because of the purchase of electric power by the department.

The water gas set will be used as an auxiliary to the coal gas manufacture at present. It has been found that there are periods during the year when there is an abnormal demand for gas. This is especially true during the canning season when large amounts of gas are used. The amount of gas manufactured from coal at these periods has been insufficient to supply the demand. Boosters sets were installed several years ago and these aided to some extent in meeting the situation. By means of these sets it is possible to force gas through the mains under greater pressure than it would ordinarily flow and thus maintain the pressure. The water gas will be mixed with the coal gas in distribution through the mains. Under ordinary circumstances, it is cheaper to manufacture water gas than coal gas, but as conditions are at present, it is cheaper to buy coal than the oil needed for the water gas manufacture.